Consumption, planned obsolescence and waste

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As some of the outdated empirical content will suggest, I have been writing this paper for several years. It just seems to get bigger and bigger and a further version which is several thousand words longer is the one I am currently editing. When finished that may replace or join this version. However, I suspect that the next version will not be the last.

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Abstract

In the five decades since Vance Packard published *The Waste Makers* (1960), planned product obsolescence has developed in many subtle and sophisticated ways. Yet its social and environmental impact remains largely unacknowledged; planned obsolescence continues to be elaborated and to undermine consumer choice, increase costs of owning and using products, accelerating the destruction of useful objects and resulting in higher levels of ecological spoiling. It is a phenomenon widely acknowledged though little discussed. Conceptual and empirical detail will be discussed in relation to i) 'in-built' technological obsolescence the design; development and incorporation of functionally fragile components leading to premature malfunction, ii) stylistic obsolescence; the styling or fashioning of myriad consumer objects such that they are deemed to have 'worn out' stylistically and aesthetically before they have failed functionally and, iii) the 'superfluous within the necessary'; the over-elaboration of products such that they are functionally 'overprogrammed', the specific design of many objects such that they cannot be repaired or adapted for alternate uses and, the way that many products urge and often require the subsequent consumption of extra goods and services simply to maintain them.

1 Introduction

In many respects obsolescence is the economic and cultural foundation of capitalism in general and of its distinctive variety of market driven consumption in particular. It is the flip side of capitalism as a progressive and modernising historical force with its stress on what is new, what is created, what is produced. A focus on obsolescence highlights that which is devalued, wasted, destroyed. Indeed, all must be made obsolete according to capital's logic, such that all needs should be satisfied via the consumption of commodities, new needs are created to be satisfied in the same way and all needs and their commodified satisfactions should be continually renewed in order to secure continual and expanding consumption. Obsolescence is the material and cultural paradigm of capitalism. As the Webbs argued over eighty years ago,

> ...from the interest of the glazier in hailstones to the interest
> of the wayside garage in accidents to motor cars and of the huge

railway car shops in the most wasteful methods of transport, there are more examples to hand than we have room to describe of the fact that under capitalism it is impossible to create an interest in production that is not also an interest in decay and destruction (1923: 71-72).

The commodifying dynamics of industrial capitalism and 'modernization' also generate other forms of cultural obsolescence including languages, cultural practices, traditions, vernacular knowledge and skills, farmed and wild genetic diversity and so on. And, of course, planned and unintended unemployment results in millions of obsolete people. Important though these forms of obsolescence are, the focus developed here concerns planned obsolescence in relation to consumer goods, the kinds of products we routinely buy and incorporate into our everyday lives.[1]

2   Explaining consumption

It is not just the theoretical and cultural stress on the new and the novel which obscures the obsolescent heart of capitalism. It is also due to the prevailing orthodoxy found in descriptions and explanations of contemporary consumption. Consider the following widespread and accepted description of consumption, one that has achieved common currency in the last few years as an antidote to those previous theories that posited the existence of false needs, easily manipulated docile consumers and the satisfaction of unconscious desires as motivations to consume:

This paper builds on the well-accepted notion that all routine decisions, such as acts of purchase and consumption are decisions about how to act and who to be. It also takes up the idea that

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[1]This spotlight on 'finished' consumer goods obscures other significant dimensions of planned obsolescence: firstly, that associated with component obsolescence in the research and development phase of production and, secondly, the planned obsolescence of varieties and species intimately associated with genetic modification especially that of foodstuffs. There is a certain irony in that in this field obsolescence is often used to promote longevity (to cope with global distribution, premature spoiling etc) rather than to undermine durability.

material objects convey emotions, and that they are used in connection with re/presentations of the self and to support group membership (Silva 2000: 1).[2]

This 'orthodox' starting point in studying consumption has particular implications here. Firstly, it sidelines other starting points including those which posit more materialist explanations and, secondly, it becomes the descriptive and explanatory paradigm through which observed consumption practices are interpreted. All empirical observation is treated according to the analytic foundations of the approach, for example, consumptions decisions are seen to be motivated by aesthetic considerations or for their implications in relation to identity construction and so on. Pragmatic motivations to consume are eschewed or re-interpreted as being cover for more ideological motivations; an ironic manoeuvre considering that many advocates of such culturally-centred descriptions of consumerism openly reject any explanations which posit an alienated consumer. Moreover, such explanations exaggerate the aesthetic and symbolic pleasures of consumption and consequently downplay both the other pleasures that are derived from consumption and the more material concerns that are a central aspect of consumption and consumerism. Meaning, for example, is seen to come from private issues of managing self-identity, family relations, self esteem and so on or public issues of status, taste or style signification. Rarely is meaning allowed to be primarily tied to the material use-value of a commodity. This over-emphasis on consumption and its associated symbolic pleasures form part of what Lodziak (2000, 2002) has termed the 'ideology of consumerism' and this paper is heavily indebted to this particular critique of the 'myth of consumerism'.

Indeed, Lodziak is one of a small number of academics for whom 'ideological' explanations of the motivation to consume feel overblown and both theoretically and empirically unlikely. There is a counter view of consumerism

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[2]The author's focus on the deployment of symbolic capital, linguistic capital, educational capital and even 'emotional' capital could be argued to distance descriptions and explanations of consumption away from material or pragmatic considerations. This is significant as the piece focuses on the consumption of those domestic technologies fridges, freezers, microwave ovens, computer equipment etc- which are most locked into practices of planned obsolescence. It is also noteworthy that appealing to the emotional' is the latest preoccupation of designers and marketers in their attempts to secure consumption of such goods (Maycroft 2004, Norman 2004).

which emphasises both the extent to which much consumption is mundane and the manner in which consumers are 'locked-in' to much consumption. In this approach a lot of consumption is regarded as inconspicuous:

> "Ordinary" consumption...is not oriented particularly toward individual display. rather it is about convenience, habit, practice and individual responses to social norms and institutional contexts (Jackson 2005: 28).

Such an approach emphasises those forms of consumption which are obligatory (utility bills, taxes, insurance payments etc.) and not primarily oriented towards issues of identity, memory, meaning and so on. It is on this terrain that analyses of planned obsolescence can most sensibly be built. Jackson gives a familiar example of such inconspicuous consumption:

> A larger house in a better neighbourhood may offer social and personal advantages to its owner or tenant. It also entails larger mortgage (or rent) payments, higher utility bills, higher local authority (council taxes), heavier insurance premiums, and a greater demand for furniture and fittings. Having made the "critical" consumption choice of house purchase (or rental), we may then find ourselves locked into a variety of other consumption decisions that have little or nothing to do directly with status (Jackson 2005: 29).

Jackson's observation is useful because it provides a corrective to so many accounts of consumption that see only signs, status and meaning. It also counters much recent hyperbole concerning the relative drop in price of many consumer goods over the last decade or so, for example, the significant fall in the cost of personal computers. While, the cost of many such items has indeed fallen the corresponding increase in bills centred around obligatory consumption have risen at a rate far higher than the fall in the cost of consumer goods. The more than doubling of gas prices in the UK recently is notable here. Hence, we recognise a situation in which the price of consumer goods (often those referenced regular as 'lifestyle' or 'identity' goods) has fallen while overall the cost of living continues to rise. Some commentators, especially those who uncritically endorse the 'ideology of consumerism', have

been tempted to account for this situation by focusing attention on conspicuous consumer goods arguing that advertisers are able to transform basic needs into desires such that consumers are led to believe that many former luxury goods are now regarded as necessities in the game of identity formation and status display. This is certainly the case to some extent, however, it is also true that many former luxury items have been transformed into basic necessities by more material and manipulative techniques (the example of the electric refrigerator will be considered further on.[3]) and, more significantly, here, the rising cost of living is much more determined by the rising price of obligatory, basic necessities rather than by expenditure on conspicuous consumer goods.[4] Again, those analysing the deployment of planned obsolescence will find many points of resonance with this type of approach to explaining consumption.

However, Jackson goes onto make a point which, I feel, draws attention to a more general issue concerning explanations of consumption. That is, one's normative approach to the overall role of consumption and consumerism will, to some extent, colour one's interpretation of the empirical evidence. The next sentence in Jackson's example is, 'Nonetheless, the status component in such decisions is difficult to deny' (Jackson: ibid). It would, indeed, be odd to deny the status element in such purchasing decisions especially given the cultural onslaught from magazines and television programmes which reinforce the view that buying or renting property is primarily bound up with issues of meaning and identity. However, such consideration of status may not be the primary motivation to 'consume' housing in a 'better' neighbourhood. What defines the neighbourhood as 'better' is crucial here and it may be that this is interpreted in ways that have little to do with status display, meaning or symbolism. The neighbourhood may be 'better' and thus appeal because it is cleaner, quieter, has less crime, has higher performing schools, has more local amenities, is closer to work or family, the houses have bigger gardens, there is off-road parking and so on. Of course, any combination of these

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[3]We could also include here the obligatory requirement over the next few years for every householder in the UK to purchase new television equipment in readiness for the 'great switchover' from analogue to digital television. The only way to avoid such consumption is to decide not to watch television anymore, hardly a realistic option for a majority of people though, of course, they remain formally 'free' to 'chose' not to do so.

[4]Empirically, this is confirmed by my own household expenditure. It is the cost of the mortgage, utility bills, insurance, nursery fees, diesel, rail fares and so on which erode my income at a far greater rate than the cost of food, clothing or consumer 'durables'.

elements will be what determines an area as 'better' and one can always find a 'status' explanation in each. Take the example of a bigger garden; it may be to 'show off' that one has more room, a bigger space for the conspicuous display of expensive gardening equipment and so on. However, it may be that a bigger garden represents more space for entertaining, somewhere for children to play, extra room for growing fruit and vegetables (the practical working of which may well result in a garden which aesthetically is at odds with the rest of the neighbourhood and with what passes in the area as the definition of a 'better' garden status-wise. Such pragmatic concerns may well be the primary motivation to consume and seem to equally valid and logical as starting points for the analysis of consumption practices.[5]

A recent survey of attitudes to property buying provides just such tempting evidence which can be interpreted in different ways. The survey in question reported that the majority of house buyers would sooner live in an 'ugly' home in their dream neighbourhood than in a 'dream' home in a 'poor' neighbourhood. One can immediately see how one's interpretative machinery will tend to lean one to certain explanations for such attitudes. Surely, it may be argued, that to live in a dream neighbourhood is about status but, if so, would not one's standing in that neighbourhood be immediately compromised by the poor quality of the house? Conversely, would not a 'dream' home in a poor neighbourhood command a certain standing in that area? There are all kinds of permutations here concerning status, property and neighbourhood and any one of them may seem plausible. However, just as credible would be more practical explanations which have little to do with 'ideological' motivations to consume; an 'ugly' home in a dream neighbourhood may represent safety, cleanliness, convenience and so on, while a 'dream' home in a poor neighbourhood may represent fear of burglary, low quality schools etc. Again, there are just as many 'material' permutations as there are 'ideological' ones

The point is that, in the real world, a complex mixture of both types of motivations, and perhaps others, will be the foundation for specific decisions to consume particular commodities. Consequently, overarching descriptions and explanations of the motivations to consume, from any perspective, are unlikely to be wholly accurate. If one favours ideological approaches then one is likely to emphasise these in such explanations, often by interpreting the

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[5]Significantly, the promotional culture around property buying, when it is not emphasising issues of meaning, tends to advocate a very pragmatic and material basis for such consumption; property as monetary investment and nothing else.

empirical evidence in a generous manner. Conversely, those seeking mainly material explanations of consumption will identity confirming evidence more readily than those less concerned with such an approach. However, in the 'unreal' world of academic discourse it is definitely the case that ideological explanations of the motivations to consume predominate often so much so that researchers seem incredulous of the idea that there may be other explanations on offer. Consider, for example, the way in which the term 'lifestyle' has been increasingly transmogrified from its specific origins into a transcendental concept used to explain consumption across all historical periods and geographical cultures and even, bizarrely, non-human nature (Maycroft 2004b).

As consumers, in this orthodox approach, are seen to be ideologically 'sovereign' other approaches to consumption tend to be rejected if they are seen to imply some kind of manipulation thesis, especially any form of ideological manipulation. However, materialists can cautiously endorse the rejection of simplistic ideological accounts of consumption and consumerism while still advancing theories of material manipulation. Explanations emphasising 'locked-in' consumption, obligatory consumption and planned obsolescence necessarily rest on such premises. A commonplace example will illustrate this; if one's local shop is forced to close because of competition from a cheaper but more distant supermarket then one is forced to make alternative arrangements in order to consume. Many options may be openly to a particular individual, internet shopping, public or private transport to the new store etc, according to an individual's particular mix of resources. What is clear though is that the person in question has been materially manipulated into changing the manner in which they consume. Questions of identity, desire, group affiliation, memory and so on are secondary to the pragmatic need to acquire the necessities of daily living in a different manner. Materialist explanations of consumption start from such premises while not necessarily rejecting wholesale the more ideological explanations offered by the more culture-centred commentators. That is, we start with the manipulation of resources and not of minds or consciousness, nor its obverse; the uncritical celebration of consumption as authenticity, pleasure and even 'freedom'. Building a partial analysis and explanation of some facets of contemporary consumption and consumerism from the starting point of product

obsolescence is firmly part of this materialist approach.[6]

Though out of favour these days, such materialist explanations of consumption, including planned obsolescence, have not always been seen as gauche and uncouth and two notable ones are considered here ahead of outlining the contours of contemporary product obsolescence.

3 The history of obsolescence and its critics

Suspicion concerning the motives of the manufacturers and sellers of goods is, of course, a long ingrained historical trait. Complaints concerning shoddy goods of one sort or another, 'snake oil' salesmen, adulterated foodstuffs, itinerant hawkers peddling tin-pot junk and so on predate the capitalist mode of production by centuries. The chance to make money off the back of ill-informed and gullible consumers has always been a temptation for those selling such goods. We can identify those advocating the use of a form of planned obsolescence, namely fashion, as far back as the seventeenth century. In his *Discourse on Trade* (1690) the entrepreneur Nicolas Barbon argued that,

> Fashion or the alteration of dress is a great promoter of trade, because it occasions the expense of cloaths before the old ones are worn out: it is the spirit and life of trade: it makes a circulation and gives value, by turns to all sorts of commodities: keeps the great body of trade in motion (quoted in Edwards 2005: 24).

The economic context here is provided by trade and the advocacy of such planned obsolescence was but one of a range of tactics at the disposal of merchants in order to increase their revenue, it is consonant with the mentality of 'buying low and selling high'.

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[6]However, there are those accounts that while they acknowledge the existence of 'inbuilt' product obsolescence still tend to link it to ideological explanations of consumption (Tapei Times article). Consumers are blamed for buying into this product obsolescence and even of encouraging it via their voracious appetites for new products and according to their ideological motivations to consume and continue consuming. This was a distinctive flavour of Packards' account (1960).

However, it is with the consolidation of capitalism that we can locate the systematic deployment of conscious techniques of planned obsolescence along with critical responses to such tactics.[7] Capitalists have to go beyond making monetary profit from trade, they are forced to engage in competition and capital accumulation as the basis of profit. Once this is the context, the search is on for means by which costs of production can be reduced, costs of prices can be increased and consumption can be reproduced. The increased tolerance and even encouragement of planned obsolescence is, then, not hard to fathom once capitalism dominates the political economy; it represents a way of securing greater profits through increased consumption of less durable goods, it helps manufacturers to offload costs of production via the use of sub-standard materials and components (a form of adulteration akin to putting chalk in flour for example), it adds to the fostering of a general cultural acceptance of the idea that consumption is primarily driven by personal greed and the desire for novelty and it also bolsters an ideology of consumption which portrays the satisfaction of all needs as only being possible through the consumption of commodities.

It is tempting given the relatively well known critique of Packard's to locate the origins of planned obsolescence in the mid part of the twentieth century. However, it would be a mistake to locate the origins of either built-in obsolescence or criticisms of such wasteful practices in the period around the appearance of Packard's critique.

Packard, writing in 1960 was documenting the wasteful practices which he saw developing over the previous couple of decades. Thus, we can roughly associate Packard's critique with aspects of planned obsolescence character-istic of the 'Fordist mode of production'. We can further compare these observations with a somewhat different manifestation of the techniques of planned obsolescence characteristic of a more recent 'post-Fordist mode of production'. Most analyses of planned obsolescence concentrate on either of these two historical phases.

We can, however, identify a 'pre-Fordist' obsolescence, and a series of crit-ical responses to it, which appeared in the early part of the twentieth century well before the widespread consolidation of Fordism with its characteristic

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[7]Before this period much product development and differentiation came about as a result of slow evolution in response to innovations in materials, production techniques and cultural adaptations (Petroski 1994).

features. The extent to which this 'pre-Fordist' obsolescence was planned is open to question and, to a large extent, the representation of such intent is dependent on the normative concerns of those who sought to document or condemn it. What is clear though is that obsolescence in the period running from the late nineteenth century to around the 1930s was mainly characterised as arising as a result of uncoordinated and proliferating production underpinned by a lack of the standardisation associated with Fordism.[8]

Many late 19th century and early 20th century product adverts and catalogues display a surprisingly bold declaration of the number of different models of commonplace objects available for purchase. For example, one reproduction of a 1907 Army & Navy Stores' catalogue offers over a hundred different pocket knives. Such a range of available options represents the culmination of a period in pocket knife development in which 'new' tools including corkscrews, can openers and screwdrivers were added to rather basic models of folding knife characterised by the dominance of simple blades. As with many other products in this period, technical, cultural or functional adaptations and additions, which may have been more or less welcome on the part of potential consumers, were incorporated against a backdrop of rapid, extensive and non-standardised product differentiation and proliferation. The keenest dissection of obsolescence and wasteful practices in this period was provided by the social commentator, engineer and economist Stuart Chase in *The Tragedy of Waste* (1925).

3.1 Stuart Chase: waste 'illth' and the acquisitive society

Noticing that the centralized and planned US economy of the First World War increased output dramatically and eliminated waste with fewer inputs, particularly labour, Chase set out to analyse the causes of waste in the post war 'acquisitive' US economy. Though his focus was on wasteful practices in production unemployment, management inefficiency, excessive distribution costs, depletion of natural resources etc- he had much to say concerning the production of 'useless"goods including super luxuries, patent medicines and

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[8]In many respects such 'pre-Fordist' obsolescence is reminiscent of 'post-Fordist' varieties. This is especially so in terms of observable product proliferation and model differentiation.

most advertising. Chase used the concept of 'illth' (the opposite of wealth), taken from Ruskin's 1880 *Munera Pulveris*, to describe the social loss that results from a society preoccupied with the production and consumption of such 'adulterated' goods. Chase used 'adulteration' as a catch-all which included planned technical obsolescence, unprecedented lack of standardization of basic components, the over-elaboration of basic necessities such that they became more expensive 'luxuries', and shoddy goods. He argued that the costs of such practices included billions of wasted lives, natural resources as well as economic irrationality manifested, for instance, in a system in which their were 102 sizes of men's shoes because there was no standardisation of, for example, size 9 across manufacturers and retailers, and, where half of all advertising material remained unread. Advertising was a particular target of Chase's ire and for him it was implicated in a whole series of related 'illth'-generating processes,

> When the whole drive of modern advertising is subtly directed toward the shifting of purchasing power from sound necessities to superfluities; when a leisure class flouts its power in the form of conspicuous consumption, and forces its economic inferiors to spend in cheap imitations what they need in sound essentials,-an element of social loss must be reckoned with (Chase p44-45).

Chase is often casually dismissed as a technocrat despite his strong advocacy of democracy, consumer rights, ecological stewardship and responsive government. However, re-reading Chase now one is struck by the common-sensical, pragmatic and material basis of his critique. Indeed, one would be tempted to see it as a pro-business guide to cost cutting and increased productivity if it were not for his comparison of the 'illth'-riddled 'acquisitive' society with an imagined 'functional"society which Chase argues we must shift towards. The functional society is recognisable as a managed, planned economy, perhaps socialist in nature although Chase tends to quote from others when he wants to be specifically scathing of capitalism.[9]

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[9]For example, Tawney's *The Acquisitive Society* (1920), the Webbs' *Decay of Capitalist Civilization* (1923).

3.2 Vance Packard targets the waste makers

Between the late 1950s and the early 1970s Vance Packard wrote a series of books of prescient and accessible social criticism which presaged both similarly 'popular' works such as Ralph Nader's 1965 *Unsafe at Any Speed*, an exposure of cost cutting and safety negligent practices in the American automobile industry, as well as more academically respected works including Rachel Carson's 1962 environmental landmark *Silent Spring*, and Herbert Marcuse's 1964 *One-Dimensional Man*. These works bought Packard much national and international exposure and, for works of social criticism, his books sold in high numbers (see Horowitz 1994).

The Waste Makers published in 1960 followed a more famous attack on the American advertising industry *The Hidden Persuaders* in 1957 and Packard's analysis of class distinction in *TheStatus Seekers* in 1959. These three works especially give a foretaste of descriptions and explanations of consumerism that have recurred over the last forty years namely, psychic manipulation of unconscious motivations and the inculcation of anxiety in the consumer, the appeal of positional consumption and, in *The Waste Makers* the material manipulation of the objects of consumption themselves (though supported with a view of a greedy, voracious American consumer driving much obsolescence through market demand).

Though popular with the general public, Packard's books were widely attacked from other quarters. Firstly, representatives of the industries he sought to expose reacted vehemently against his writings. Advertising executives, manufacturers and product designers have all, both at the time and since, poured caustic opprobrium on Packard and dismissals of his 'jeremiads' and 'muckraking' are commonplace.[10] He was also noticed by academic writers and public intellectuals some of whom gave a balanced appraisal of his writing. Herbert Marcuse, for example, praised Packard in *One-Dimensional Man*for his straightforward approach, disapproved of his dismissal by some for his journalistic approach, while also arguing that his non-theoretical line of attack resulted in only partial critique. Others were not so keen to recognise Packard's contribution or to admit him to the status of public intellectual. However, Horowitz (1994) argues that Packard left a legacy of popular

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[10]Such was the popularity and widespread dissemination of Packard's ideas that inevitably the mechanisms of consumer manipulation he attacked were humorously turned against him in numerous ways (see Horowitz 1994).

phrases in the public consciousness that were surely the envy of many recognised public intellectuals. Nonetheless, Packard was taken to task for his anecdotal approach, lack of both theoretical rigour and statistical support. Today we may also add concerns regarding his casual sexism and his lack of acknowledgement of writers who he himself drew on including Thorsten Veblen and John Kenneth Galbraith. Still, the influence of Packard is discernable in much American social criticism of the 1960s and 1970s though many commentators openly claimed little affiliation and disdained his journalistic approach and style while simultaneously drawing on his ideas.

More specific sources of disagreement were also evident. In *Monopoly Capital* (1966), Baran and Sweezy while critical of some of the practices associated with product obsolescence, argued that such developments act as a 'powerful antidote to monopoly capitalism's tendency to sink into a state of chronic depression' (Baran & Sweezy 1966: 131).[11] Such practices give a 'general boost to income and employment' (ibid) and in acknowledging this Baran and Sweezy touch upon one of the recurring though often missed themes in Packard's book. That is, that during the period that Packard is considering, the manufacturing, design and promotional industries of American capitalism were openly advocating the use of product obsolescence for economic reasons. Trade papers carried frequent discussions by advocates of obsolescence and, while heated debate ensued whereby many engineers especially rejected the 'immorality' of planned obsolescence, there was little attempt to deny the potential of obsolescence in sales and profit maximization.[12] The denials, denunciations and obfuscations that greet suspicious accusations of product obsolescence today were much less strongly articulated in America in the late 1950s and early 1960s.

Since Packard's account was published relatively little has been academically added to the description and explanation of product obsolescence and, certainly, until very recently there has been a paucity of empirical information against which the theoretical accounts of planned obsolescence can be

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[11]Baran & Sweezy use Marx in their critique arguing that Packard's approach shows the strength and the weakness of 'that kind of criticism which knows how to judge and condemn the present, but not how to comprehend it'. (Marx quoted in Baran & Sweezy 1966: 128).

[12]The effrontery that engineers felt but which industrial designers (ie. product stylists) did not was an indication of a growing trend at the time for engineering design of the internal mechanisms of a product to be increasingly separated from its surface styling (Papanek 1985, 1995).

judged. Whether this is because Packard's analysis has subsequently been regarded as either misplaced and inaccurate or, conversely, comprehensive is difficult to determine. However, Packard is still most routinely referenced, both positively and negatively, and little development of his ideas has occurred appropriate to the particular forms of contemporary capitalist social relations (though see Lodziak 2002). Consequently, the shadow of Packard's critique will be evident in what follows.

4   Mapping contemporary obsolescence

The various techniques of planned obsolescence used in today's economy, many in conjunction, have been grouped here under three broad categories: technical obsolescence, commonly refers to the design of certain components such that their failure point can be calculated and predicted to occur prematurely in relation to the product as a whole. Products are designed to wear out sooner than they could or perhaps should. There is also stylistic obsolescence or fashion which by definition is the premature redundancy of myriad objects due to their semiotic attributes having been deemed 'out-of-date' by the industries which produce and promote those goods. The third dimension concerns the preponderance of the 'superfluous within the necessary' (Lodziak 2002), often unwanted features, unused functions, the obligation to consume related products, marginal utility and the like, all of which add cost, ecological consequences and 'uselessness' to many objects and devices.

Such planned obsolescence is not necessarily the result of evil, profiteering designers secretively contriving crucial but fragile components. Indeed, social legislation has aided in protecting the consumer from many of the worst practices. Rather, such obsolescence is an inevitable consequence of the development of consumer design products within the political economy of capitalism. Inter-firm competition, the need to maintain and increase one's market share and profits, the necessity to off load or 'externalise' costs, etc, are what generates this drive towards obsolescence. Packard approvingly quotes the then head of America's Consumers Union, Dexter W. Masters,

> When design is tied to sales rather than to product function, as it is increasingly, and when marketing strategy is based on frequent style changes, there are certain almost inevitable results:

a tendency to the use of inferior materials; short cuts in the time necessary for sound product development; and a neglect of quality and adequate inspection. The effect of such built-in obsolescence is a disguised price increase to the consumer in the form of shorter product life, and often, heavier repair bills (Masters quoted in Packard 1960: 127).

So much for consumer 'durables', an oxymoron which helps disguise the reality of the production-consumption-destruction cycle! Of course, the promotional industries of capitalism, on the one hand, present commodities as eternal while, on the other hand constantly alerting us to new and different commodities touted as replacements or additions to what we already have. Manufacturers devote significant resources to finding out how many of a particular class of object will fail after a particular time point. They also calculate and record the probable life of objects in general. Consumers do not have access to such information and, consequently, manufacturers and their promotional agents are cleverly able to time the introduction of improved or replacement products. The immutable, eternal and perfected qualities of previous versions are discreetly dropped: how many times has one seen adverts for 'ultimate' products which a few months later reappear as 'improved' versions?

As mentioned earlier Packard's critique was very much rooted in the political economy of Fordism with its emphasis on long runs of standardised products built from uniform components. Packard's antenna was acutely tuned to the 'edges' of this Fordist narrative and his critique perhaps casts critical light on the 'standard' interpretation of Fordim itself. Whilst following such a line of analysis is beyond the scope of the current paper, Packard's approach does draw attention to some of the limits of the dominant interpretation of Fordism. Packard points to the lack of standardisation of products, the incompatibility of components (often components of incompatible products manufactured by the same company under different brand names), the frequent model changes, the planning of styling such that it can be deemed to be obsolescent and so on.

What Packard would make of current 'post-Fordist' conditions is open to speculation. To a large extent post-Fordism is explicitly concerned with what has been termed 'accelerated obsolescence' (Gorz 1999), that is the rapid and expansive hastening of product proliferation and differentiation. Post-

Fordism is, indeed, driven by planned obsolescence as the pressures of capitalist political economy have demanded the saturation and over-saturation of societies with profit generating commodities. Allied to this physical elaboration and profusion of products we can note the extensive commodifying of previously non-commodified services as well as the increasing commodification of experiences. More ingeniously, capital has made great strides in re-valorising its own 'diseconomies' or 'externalities' -waste, pollution, physical and mental ill-health, etc- via their incorporation into new products and services. Externalities have been re-valorised both as raw materials and through the development of novel commodities explicitly claimed to be antidotes to the pathologies they have been implicated in producing in the first place. It is among these contours of post-Fordism that an attempt to classify, describe and explain the various dimensions of planned obsolescence can be undertaken.

4.1   In-built technological obsolescence

In a discussion which focuses on planned obsolescence, it remains important to acknowledge that unplanned technical obsolescence can have far reaching effects. Where a product is demonstrably an improvement on its predecessor, either by virtue of function, safety or efficiency, then whole classes of existing products can immediately become obsolete. The progenitor for such change may itself be a product of an 'internal' design or engineering decision or may be imposed from 'outside'. For example, legislation outlawing the 625 mercury battery, at a stroke, made the light meters on millions of late 1960s and early 1970s cameras obsolete. New cameras with safer batteries rapidly replaced these models.[13] Similarly, the gradual phasing out of a component, part or 'consumable' may lead to a similar situation. The 'disappearance' of several film formats has made obsolete millions of useable cameras and, of course, digital photography at least suggests, and possibly has an inherent dynamic towards, the obsoleting of film photography in general. While one

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[13]Most of these cameras still functioned mechanically but without light meters they required some specialist knowledge to operate them. Gradually, alternatives began to be offered and now, some 35 years after these cameras were produced and many years after the battery was outlawed, one can buy a range of replacement batteries and even gadgets which step down the voltage of readily available batteries to the correct level and rate of discharge. In this way, many such cameras have been rescued from obsolescence.

may immediately be cynical about such wholesale obsoleting of products and see only the operation of planned obsolescence, shadowy in the background, it must be admitted that consumers seem only too willing (if we consult the sales figures) to accept such changes, especially if the new products seem to offer a functional advantage, for example, digital photography with its automation and immediate visual feedback. However, as Illich observes,

> If new things are made because they are better then the things most people use are not quite good (Illich 1973: 75).

Illich here refers to the subtle way in which manufacturers do introduce planned obsolescence under the guise of supposedly inevitable technical improvement of products and services. The result of such improvement is presented by the promotional industries of capitalism as a constant lag between current possession and what is available and, correspondingly, a concerted attempt to encourage replacement. The switch from vinyl records to compact discs and onto to other music formats (mini-disc, digital versatile disc, digital audio tape, mp3, etc.) have all aimed to get people to replace both their music collections and the means to hear them. The same is true of the attempts of the computer industry to get people to 'upgrade' both their hardware and software at regular intervals. Technological development combined with technical incompatibility between systems, hardware and software all aid this dynamic towards obsolescence. The fact that many incompatible components are often manufactured by the same company through subsidiary divisions adds to the suspicion that obsolescence is indeed planned or 'in-built'.

It is exceedingly difficult, however, to get designers, industrialists or manufacturers to admit that the 'death point' of components is still calculated in order to assemble products around particular vulnerable parts thus necessitating regular repair, upgrading or replacement. The suspicion lingers, however, and Packard's reliance on anecdotal evidence is perhaps indicative of the secrecy that exists in relation to this particular aspect of technical or technological obsolescence. For example, I have been informed by a representative of a major European domestic appliance manufacturer that the refrigerators that they manufacture for the German market are engineered to last several years longer than those engineered for the British market. Partly, this is due to the expectation of greater durability in Germany and partly due to more rigorous legislation. Seeing this explicitly claimed in a

company's public literature though is extremely unlikely and this quietude concerning planned technological obsolescence is in marked contrast to the boasting identified by Packard.

Consequently, it is extremely tricky to produce firm evidence concerning the death rates of components and products and the difference between expected and actual product durability. Nonetheless, we can record some observations that would seem to be explicable only on the basis that such obsolescence is still widely practiced. Firstly, the above anecdotal example points to a commonplace attitude in relation to the durability of many products; that German or Japanese products especially are better designed, engineered and manufactured than British or American products. It would seem that choices are being made in relation to the durability and reliability of particular parts.

Papanek (1984) gives an excellent example of the difference in durability of similar products (built by the same corporation and on sale in two markets at the same time) in different national contexts. He choses slide projectors[14]: a German version comprising a single model with plug-on accessories, technically advanced performance, great durability and resonable cost; the American model, conversely, being one of a proliferating line of versions, non-adaptable, lacking the technical features of the German version and costing nearly four times as much.

Secondly, the popular lament that things do not last as long as they used to still persists. This was identified by both Chase and Packard and more recently by Cooper (2004) and hence some suspicion concerning the loss of a 'Golden Age' of super-durable products must be admitted. However, much anecdotal evidence endures that many things fall apart these days much more readily than in the past.

Thirdly, products now increasingly tell the consumer when they are apparently technically defunct. That is, they openly profess and practically celebrate their functional obsolescence. For example, many disposable shaving cartridges, which already lack durability by definition, have a coloured stripe that fades indicating that they need replacing and irrespective of the sharpness of the blade. Many toothbrushes have bristles impregnated with dye which fades at exactly the same rate as the efficacy of the brush itself

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[14]An ironic though apt choice itself as the slide projector has become practically obsolete due to developments in digital image recording and projection.

is argued to deteriorate. One suspects that in both cases the colour fades irrespective of direct, intended functional razor or brush use. Rather, an intermediate variable is at work; often simply a time dependent fading dye or one which fades with exposure to moisture. Similarly, the filter replacement indicators of many purifying water jugs are run by an internal battery and chip which times and indicates the expiry of each filter according to a predetermined timespan, for example four weeks. This is irrespective of the amount of water that has passed through the filter, surely the key indicator of the use of a water filter rather than time? The discovery of continued and surprisingly prolonged durability is often the outcome of ignoring these in-built suggestions to discard, dispose and replace. Similarly, recent advertisement for an electric toothbrush promises that the device will 'communicate' with the user. In reality, this means it has a small screen that informs you when it's time to replace the brush head.

Fourthly, the 'failure' of one small component may lead to a situation in which the suggested, recommended or demanded course of action is the replacement of the device as a whole. For example, a small control knob, which controls the tumble dryer timer, on one's washing machine is broken accidentally and cannot be replaced or repaired because it is not a discreet component but is welded onto more substantial components. This necessitates either a hefty repair bill, often uneconomical in terms of the cost of replacement of the item as a whole, or the replacement of the whole product in question.[15] Allied to this is the situation in which the straightforward operation of a device invalidates further function. For example, many 'pure' water plastic bottles have been designed with athletic drinking bottle style nozzles promising easier, non-spill access and easier stoppering. However, many of these devices cannot be removed easily from the bottle without damaging the container or if they are removed cannot be put back on. This prevents the bottle from being effectively re-used.

Of course, manufacturers are able to play on the many welcome technical advancements that new product ranges and new technologies promise. For example, the increased safety of many household objects has often come about from the efforts of designers to minimise the risk of injury and ill-health that could result from poor design of commonly used products; treatments and fabrics that retard the spread of flames, devices that switch off electrical

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[15]Or an adapted response using pliers to set the tumble dryer timer with absolutely no functional ill effects but with an obvious cosmetic deficit.

equipment if left unattended, automobile air bags, personal computer monitors that reduce harmful ray emissions, and so on. However, it should be remembered that designers are often responding to legal safety requirements set from outside of industry rather than voluntary developments. Technical advance also produces largely welcome obsolescence in terms of ease of increased ease of operation, convenience, and efficiency. However, a caveat is again in order. Many labour-saving devices produce more labour, and many time-reducing technologies simply increase the work one has to do (Whiteley 1994). The improved technical performance of consumer design goods also merits mention, though one does become increasingly irritated by the hyperbole used to promote tiny, incremental technical improvements in products. The number of 'revolutionary' new products and 'ultimate breakthroughs' (embedding a tiny ball of rinsing agent in a dish-washer detergent tablet!) strains one's credulity.

Conversely, there are reasons to suppose that many products display more durability than in the past. Environmental concerns, legislation, automated manufacturing processes etc, have all worked in concert to produce more durable products in many areas. This has especially been the case with electrical domestic goods, for example, televisions, video recorders and so on. In the face of these developments that have led to increased durability manufacturers have sought other ways of increasing the cost of consumption of such products. An ongoing dramatic fall in the retail cost of such items has provided a further reason to encourage obsolescence. As repair, upgrade and replacement services can no longer be so securely guaranteed as in the past, the emphasis has fallen on the area of product warranties. When Packard wrote *The Waste Makers* a common lament of manufacturers, in the face of naked and rampant planned technical obsolescence, was that products were breaking down thus necessitating repair or replacement before warranties had expired. Product manufacturers urged either a reduction in the duration of warranties or a tad more durability in order to take the failure rate of a product beyond the end of the period of cover. Nowadays this situation has changed somewhat. Increased physical durability has led to the strong promotion and unnecessary selling of 'extended' warranties which provide cover against breakdown over periods of several years. The encouragement of such warranties alerts us to the fact that product durability is again out of step with producer's economic requirements but, this time the other way around; products are lasting too long in relation to warranties. The exorbitant cost

of such warranty cover, often up to two thirds of the purchase price of the product over a period of three to five years, can be interpreted as a way of attempting to recover the previous revenue that resulted from repair, servicing and replacement of less durable goods.

The personal computer provides a useful example of the dimensions and extent of in-built technical obsolescence. All personal computer manufacturers have used rapid technological advance in function of hardware, software and operating system as pivots around which to articulate campaigns aimed at persuading consumers to upgrade. Technological obsolescence also makes it very difficult not to engage in extra consumption in order to maintain the functional efficiency of the equipment. There are often frequent technical 'revisions' of the hardware which claim increased functionality through faster processor speeds, more memory, bigger hard drives, improved software and so on. Moreover, new software standards have demanded that consumers need to acquire new software and more powerful machines in order to simple things such as connect to the internet. Industry standards regarding the interfaces between the computer and peripheral devices (SSCI-USB-Firewire-USB2 etc) have also meant that new cables, printers, etc, have been needed. Great technical obsolescent power is manifested in the appearance of new 'system operating software', for example, Microsoft's recent launch of 'Vista' has been accompanied by many complaints that most perfectly functional computers that are more than two years old will not be able to run the new operating system. In this instance consumer 'choice' becomes a decision as to whether one continues using obsolete software with functional hardware or non-obsolete software with unwanted, new hardware. However, for many people, individuals and group users, there will be no choice: they will have to acquire both the new hardware and software in order to 'keep up' with those around them. Consumer choice is transformed into a consumption imperative.

Despite such constricting imperatives the deployment of planned, in-built technical obsolescence can give rise to countervailing strategies and 'solution' aided by the dynamism of capitalist social relations. This is certainly the case in the short term at least and may last until the same pressures build up for the consideration of the adoption of planned obsolescence in the 'solutions' themselves. For example, in recent years there has been much public complaint concerning planned technical obsolescence on the part of printer ink cartridge manufacturers. They were seen to be attempting to engineer con-

sumption loyalty via technical means through technologies which demanded that one manufacturer's printers would only work when used with the same manufacturer's cartridges. Moreover, complaints of forced, repeat consumption arose due to the fact that many cartridges stopped working while still 30-40% full. This was a technical restraint which could quite easily be reversed. In consequence of these complaints many third party suppliers have appeared who offer to refill branded cartridges or to supply technical 'clones' which will work in branded printers. This sector of then economy has grown rapidly in recent years and it is probably only a matter of time before competition leads to the adoption of cost-reducing or cost-offloading strategies including the adoption of forms of planned obsolescence.

4.2   Stylistic obsolescence

The emphasis in this type of obsolescence is on the fashionability of commodities and fashions in clothing provide the exemplar of stylistic obsolescence, an example with which we are all familiar. As Chase commented in 1925

> When a little group of designers in Paris, bent on making themselves rich as speedily as possible, attempts to dictate the maximum rotation in women's fashions so that sales will be increased, and good textiles discarded within a few months, -real waste in the form of illth makes its appearance (Chase 1925: 44-45).

This 'ideal type' of stylistic obsolescence has become the model for many other product areas which have adopted rapid turnover in physical form as part of the production-consumption cycle. It is not just clothes that are deemed to be 'in' or 'out' of fashion but interior decor, foodstuffs, automobiles, book covers, household appliances even garden plants.

Such developments represent an intensification of the 'styling' of products in previous periods such that there is a recognizable 'fifties' type of automobile style, interior decor style and so on. Rather, these styles have given way to discreet and rapidly changing fashions such that products are deemed to have worn out stylistically well in advance of any functional considerations. For example, some mobile telephone designs are on the market for only a few weeks in an attempt to increase demand for the latest heavily promoted

look. The aim is to get the particular model to sell out as quickly as possible while retaining interest in what people realise is a short-lived incarnation of the product. If stocks are not sold the remaining number will be removed from sale so that there is no stylistic overlap between itself and the next model to be released. The advertiser's cry of 'get it while stocks last' used to be a disingenuous call to consume products that would simply be manufactured until demand had been met. Nowadays, because of the nature of current productive technologies and promotional strategies, the injunction means exactly what it claims; 'there are only going to be a few so if you want one you'll have to be quick'.

At the time of Packard's critique there was a growing unease shown by some manufacturers concerning the use of planned, technical obsolescence. Some argued that it was simply an immoral or criminal duping of the consumer while others were more concerned with the negative publicity and reputation that would arise against a company which was found out, especially if they had had a previous reputation for quality, durability, craftsmanship, etc. Consequently, great efforts were put into the development of stylistic obsolescence and Packard considered this to be more of a concern than planned, technical obsolescence. Manufacturers realised that if they could make products 'wear out' stylistically than they could claim that this was driven not by their own obsolescence techniques but by the desires of consumers expressed as preferences in the market. The heavy promotion of annual model changes, along with the rapid growth of catalogues, mail shots, product exhibitions and the like, all segued into this novel emphasis on planned stylistic obsolescence. It was felt that consumers would be far less suspicious of such stylistic obsolescence if they could be convinced that regular stylistic changes were an opportunity rather than a costly inconvenience. This played strongly on models of positional consumption, keeping up with the Jones' and on the psychological techniques which Packard had documented in *The Hidden Persuaders*.

Whatever the merits of Packard's theories concerning psychic manipulation and motivational research, it is clear that manufacturers regarded stylistic obsolescence as the key to increased productivity. The styling of previously unstyled or understyled products and the production and heavy promotion of new styles are the key components of such obsolescence. Packard, for example, focused on 'streamlining' or 'Streamforming'. 'Streamform', a characteristic teardrop shape, had originally been developed in aviation technol-

ogy to counteract wind resistance. However, from the 1930s onwards Stream-forming or streamlining could be found on myriad products both within the transport field and outside of it. Suddenly all manner of commodities that never experienced drag were covered with symbolic aerodynamic pretensions. What Streamform was able to do was to bring the supposed characteristics of the capitalist mode of production -speed, progress, efficiency, rationality-and attach them to the commodity form. However, such meanings were built upon political economic foundations which increasingly recognised the potential of product styling as a form of planned obsolescence. It is perhaps then no coincidence that streamlined products proliferated in the 1950s as concerns regarding technical obsolescence mounted. Packard comments,

> This shape, which had come from the discoveries of aircraft de-signers, had less but some plausible functional relevance in auto-mobile design. But the relevance of the tear-drop look became completely unclear when applied to such things as refrigerators, stoves, meat-grinder handles, electric irons, orange juicers, and radios, Wind resistance seems a strange preoccupation for the designers of such products (Packard 1960: 119).

Taking a lead from the automobile industry the 'Detroit Influence' of widespread product styling multiplied rapidly across the domestic product range.[16] Moreover, despite the meanings one may be tempted to read into the streamlined form itself, streamlining simply became fashion and by the late 1950s American automobiles and refrigerators were being manufactured in sharp, square box forms.

More recent years have seen the proliferation of restyling and repackag-ing of many familiar objects in unfamiliar forms. Form and function have been severed so, for example, one can buy technically advanced goods that have been styled in old forms from a different era. The ability to cheaply fake old materials has added to this ability to confuse form and function. It is a promotional technique that has flourished in the last fifteen years especially. Examples include vaguely familiar 'retro' designed goods such as radios which are composed of an ersatz Bakelite shell around up-to-date technological components or, conversely, explicitly technologically advanced

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[16]Packard notes that the refrigerator manufacturer Frigidaire, which then was a division of General Motors, were pioneers in the promotion of planned stylistic obsolescence.

goods which make allusions to the past through their styling. The Dyson vacuum cleaner with its entirely superfluous plastic and non-functioning heat dissipation fins reminiscent of science fiction emblems is noteworthy here as the iMac computer with its 1950s' cartoonish carcass. The periods between redesigns of the surface elements of products have shortened and a general perception of increasingly rapid stylistic turnover is apparent.

Indeed, Apple computer's iMac provides a good example of the operation of 'in-built' stylistic obsolescence in relation to personal computers. What was most distinctive about the iMac when launched was its recognisable and notably different surface styling in terms of shape, colour and dimensions. Alongside various technical 'revisions' (which themselves often acted as cover for the deployment of in-built technical obsolescence) ran a number of stylistic changes; the original 'Bondi Blue' iMac, an acid coloured range, a patterned range, a graphite version and so on. A modest personal computer was thus transformed into a 'lifestyle' commodity and promoted as much on its desirability in design terms as on its functional capabilities. The fact that these capabilities were modest compared to other personal computers did not prevent Apple charging significantly higher prices for its computers by emphasising the aesthetic dimension while somewhat playing down the functional one. In the last few years the iMac has been relaunched twice in strikingly different forms to the now 'classic' version.

Multiple 'readings' of the meanings of such objects are seen to be possible in this polysemic (at times seemingly pansemic) material culture, a reflection of a recent more general fascination with the surface appearance of cultural products. More significantly, it should be remembered that each stylistic relaunch of a product or product range requires increased amounts of materials, energy, research and development, manpower, prototypes, testing, packaging, advertising and so on. This adds extra cost to the final product whilst working to reduce its stylistic durability. The underlying material manipulation upon which stylistic obsolescence is built is significant in other ways too. So, while it may be truthfully argued that no one is forced into stylistic replacements for appearance's sake alone, it is often the case that such cosmetic refinements mask these more material concerns. Firstly, newly styled products are often technically incompatible with older models or ranges of products. Secondly, restyling can often mask, using supposed technical justifications, further obligatory consumption either as an integrated part of the 'new' product or as additional consumption in order to maintain the level

of functionality characteristic of the 'unfashionable' version it is replacing. Thirdly, manufacturers will often remove the 'unfashionable' products from the market when launching the restyled alternative. As a result, consumption of the restyled version may become obligatory when it becomes necessary to replace a minor component, effect a certain repair and so on.[17]

4.3   The superfluous within the necessary

Within this definition we can group together many features of contemporary commodities and aspects of consumer design which of themselves either require or strongly suggest further obligatory consumption. The first of these concerns the general over-elaboration, over-designing or 'overprogramming' of commodities. In a general sense much consumption of functional devices involves the obligatory consumption of 'extras' for which no need may be felt. Functions which are never discovered, features which seem to offer marginal utility and widgets of all kinds are increasingly built in to consumer products. Not only does such functional elaboration provide more opportunities for manufacturers to practice planned obsolescence of all kinds it also increases the initial purchase costs of the object itself. This is manifested in a number of ways; increased use of 'protective' and convoluted packaging, extra promotional and instruction materials, the inclusion of extras which anticipate further consumption and which, indeed, have no purpose until further consumption occurs. Moreover, all of this added though dubious functionality increases the opportunities and commitments to engage in further consumption of spare parts and various services; information, repairing, maintenance and so on.[18]

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[17]One anticipated reaction to critiquing stylistic obsolescence would be that such fashion changes respond to an inherent human desire for novelty. Chase's pragmatic comment when confronted with similar criticisms in 1925 was:

> In our judgment a slow swing in fashions represents a true human want. One wearies of sameness in clothes and furnishings. The 'last word' frequently adds a desirable spice to life. The waste of illth does not arise with fashions as such, but only with stimulation which artificially shortens the period of the normal swing (1925: 96).

[18]Manufacturers have particularly seized upon environmental concerns to develop elaborate descriptions of an economy moving from the consumption of products to that of 'product-services'. In reality, lurking behind these moves are a realisation that profits lost

The increasing separation of engineering from surface design can also be significant in relation to planned obsolescence. Designers of consumer goods themselves increasingly have less knowledge of the sophisticated components comprising today's consumer products. Designers increasingly simply style the surface carcasses in various ways. Consumers often have even less knowledge of these mechanisms. However, this situation is worsened because many contemporary product carcasses physically do not allow access to internal mechanisms. Completely sealed units without access areas or, with access made available only with specialised tools, is bolstered by warranty agreements that become void if attempts are made to dismantle the products. Hence, new opportunities arise to plan obsolescence in relation to both surface and internal components in terms of parts, tools, services and so on.

Related to this, we can note that the increasing functional specialisation of many consumer design products also works against autonomy in relation to alternative, adapted, and customised utility. This autonomy, in relation to both use and repair and, in relation to simply learning to understand the nature of the designed artifactual world, is fast diminishing. In a world in which shoes cannot be resoled, transistor radios cannot be repaired, clothes cannot be mended, etc, the opportunities for obsolescence flourish. Indeed, the loss of vernacular knowledge, skills and values which derive from being able to exercise autonomy in relation to products tends to suggest that further consumption is the necessary remedy for such alienation. Dependency on additional and obligatory consumption is often the result. Clearly, this further opens up opportunities for obsolescence to be a planned part of such 'solutions'. Again, it should also be borne in mind that all of these alternatives require increased amounts of materials, energy, research and development, manpower, prototypes, testing and so on. This adds extra cost to the final products whilst generally working to reduce their overall durability.

The increasing 'nesting' of a particular product, service or experience within a network of products, services or experiences also provides a general increase of the potential to get people to consume more and consequently of the opportunities to deploy planned obsolescence of function and style. So, for example, with industrially produced food, the products are produced and grouped around variously functionally specific household appliances such as freezers and microwave ovens. There then tends to be a proliferation of other

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through increasing product longevity can be recouped by tying products closer to often compulsory services (Maycroft 2000).

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commodities seen as specific or necessary to the generating object; microwave utensils, recipes, cook books, ingredients, expert services etc. Some such instances are quite subtle in their operation and have become normalised as examples of just 'how things are'. The domestic refrigerator provides a good illustration.[19] This is now regarded as a necessity for most people yet if one analyses the basic function of the refrigerator, to keep foodstuffs cool thus preventing premature deterioration, the need for a refrigerator is clearly contingent on a number of other factors. We can leave aside ideas concerning the culture of food, the climate and so on and acknowledge that the electric refrigerator exerts a radical monopoly or represents a sub-system over food cooling and storage. Modern central heating and insulation produces over-warm domestic environments that require specialist food preservation technologies. Moreover, the pressure to reduce building costs provides a justification to build new properties without pantries for cool storage. Furthermore, many contemporary foodstuffs, using complex production techniques based on the use of high levels of artificial additives, actually require refrigeration in order to prevent premature spoiling, and so on.[20] Other examples are more obvious and crude and are often experienced as additional compulsory consumption which it is practically impossible to evade. Small scale examples may be the obligatory purchasing of stamps in order to pay the postage cost of bills or the necessary procurement of some kind of bag to line one's bins. Intermediate examples include the 'freedom' of paying one's own transportation costs when one shops at an out of town supermarket. Still more costly examples include the sudden shower of additional costs that are incurred -products and services- when buying or selling a property.

Not only does such extra obligatory consumption provide many more opportunities for all kinds of planned obsolescence, it also occurs against an economic background that has increased the proportion of basic income that has to be spent on necessities and which people chose to spend on 'luxuries' (Lodziak 2002). Many such luxury items have themselves become necessities and, in the advanced industrial economies the spending power of average

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[19]The history of the development of the domestic refrigerator is itself a case study in the methods by which concerns other than durability dominate the production and distribution of particular technologies. Durable, efficient and quiet gas refrigerators have been totally replaced by relatively short-lived, inefficient and noisy electric alternatives.

[20]So, for example, bread without preservatives, flour enhancers, and the like will gradually go stale (i.e. still useable for breadcrumbs and certain recipes) in a pantry while bread containing 'preservatives' will often quickly go mouldy and unusable if not refrigerated.

earnings has actually decreased over the last twenty years which means that not only is general spending power being eroded by the increasing cost of necessities, it is further eroded by the transmutation of many luxuries into necessities and still further eroded by the effects of planned obsolescence of both necessary and luxury products and services: a triple whammy for many people; poverty increases and alongside it obligatory consumption (Beder 2000). And because, of their dependence on the world of leased, second-hand less efficient goods, the poor often pay extra for consuming higher levels of more obsolete products.

The example of the personal computer is, again, instructive. Many customers who purchase their first personal computer express astonishment at the amount of further necessary consumption needed, or at least strongly encouraged, in order to achieve the functionality suggested in the promotional culture surrounding this class of objects. Expert installation services are offered in order for the object to be basically operational, premium rate telephone support services exercise a monopoly of expertise in relation to day-to-day operation, maintenance and advice. Allied to this, the documentation provided is frequently rudimentary often necessitating the purchase of expensive and technically opaque manuals to explain the operation of hardware and software. The number of 'peripherals' (often a misleading term as they are needed in order to get basic things done) can also proliferate: external back-up drives, printers, scanners, digital cameras, cables, and so on, as can the consumables needed to operate these devices; various discs, paper, ink etc. Similarly, access to other external services carry extra consumption costs. For example, internet access which is not a tangible product or a real service, simply access to the 'online' world, carries its own necessary consumption of further hardware, software and services.

Superfluity does not end there, however, many software programmes are commonly referred to as 'bloatware' because they carry numerous marginal functions in relation to the central needs of users. Such complexity is reflected in the cost of the product, of course, but, more significantly increases the necessity of users to consumer further products or services (more manuals, telephone support, computer courses) in order to gain knowledge. The fact that a very small percentage of functions are used in relation to most software programmes tends to undermine the developer's claims that consumer demand drives such 'improvements'. Technical incompatibility between programmes reinforces such misgivings. Indeed, many users new to the world of

personal computing express further dismay that they need certain specialised software to do simple things such as open documents downloaded from the internet, view particular types of document, perform routine maintenance on their systems and so on. We could go on even further; manufacturers constantly encourage users to 'upgrade' their keyboards and mice etc, not only to more technologically advanced replacements and more aesthetically pleasing ones but, also to more 'ergonomic' surrogates which rather begs the question of why less ergonomic versions were included with the original object?

5   Conclusion

The result of the processes of obsolescence discussed above is waste of various sorts and in increasing amounts. Waste, however has conceptually and practically changed its nature several times over the course of the last couple of hundred years and this has consequences for how the nature of production, obsolescence and economic value operates. According to Ivan Illich

> [waste]...once meant the abuse that deprives a fertile tract of land of its fruitfulness...But this is not what waste now means. Since about 1840, waste has meant a new kind of stuff, of which I find no evidence in earlier sources. Peasant societies and earlier towns knew no waste. Even at the onset of industrial production, waste still meant what falls off the workbench. It then comes to be recognized as a stuff produced by industry that is a 'no-good' to such a degree that it must be removed at almost any cost. Waste, therefore, became an eminently economic category. (Illich 1992: 45)

This transformation has continued as waste has changed from unproductive land, to that which is left over from the productive working of materials, to an unwanted by-product of industrial production, through to its increasing contemporary manifestation as a potential raw material to be revalorized in new circuits of production. Illich himself was an early commentator to note the manner in which capitalism commodifies its own 'diseconomies' (drugs aiming to assuage the mental distress which results from meaningless,

imposed work for example) and the revalorization of waste represents the extension of this logic. To some extent this has been forced onto capitalists as the rapid acceleration of product differentiation and range turnover has demanded that waste is reintroduced into the productive cycle to meet the increasing demand for raw materials and re-useable components. Combined with growing concerns over resource depletion, the increasing costs of resource extraction, and abetted by uneven national environmental legislation including extraction and landfill taxation, such concerns have focused attention on the potential of waste as a raw material particularly strongly (Maycroft 2000).

This latest change in the conceptualization and use of waste should, however, not be overstated. Landfill sites continue to grow and, even though the percentage of waste discarded in this manner may decrease, the absolute amount can continue to increase because the overall levels of consumption and discarding of products continue to rise. Of course, built-in obsolescence plays a key role here because the increasing acceleration of turnover of product ranges is predicated on increasing the rate of obsolescence and thus waste of one sort or another. This increases despite the increasing amount which is revalorized due to the fact that all new products require packaging, promotional material, instructions, etc, that is, an increasing amount of material which is not easily recoverable for revalorization.

Nonetheless, waste, in part, could be described as the unintentional by-product of obsolescence. In the Fordist paradigm it was largely unrecoverable for revalorization: completed products with sizable buffer stocks left unsold in warehouses (often coming to light years later to be re-valorised as 'antiques' or collectables), obsolete standardised components left unused in substantial quantities, and so on. In the phase of post-Fordism waste is potentially more recoverable and is designed to be so: a proliferation of components which can be reconfigured with new shells and which give rise to finished products which themselves also become ripe for revalorisation. There are also huge mountains of finished products, which while potentially recoverable or reusable, end up being dumped in increasing numbers despite the fact that many of them work perfectly. They comprise the garbage of technically and stylistically planned obsolescence, much of it exported to parts of the global economy where the risk to one's health of dismantling products containing hazardous components and substances has to be constantly weighed against the need to survive.

Indeed, this situation gives rise to a gruesome irony evident when considering the status of waste today; waste scavenging on landfill sites is the subsistence activity for hundreds of thousands of poor people in the global economy. These are literally 'wastelands'; land is rendered unproductive or 'waste' because it is covered by industrial waste. Hence two historical conceptions of waste coexist in one place. While these landfill sites themselves are 'productive' in the sense described above, such productivity is paltry compared to that potentially locked into these wastelands.

It is the existence of these bizarre wastelands, in which the functioning but discarded rubbish of the advanced industrial economies becomes raw material for meagre subsistence, that should alert us to the processes and material conditions which allow the ongoing 'perfection' of techniques of planned obsolescence in the advanced economies. Product choice, product differentiation, the falling price of household commodities, the existence of shops where one can buy t-shirts for a few pence, the 'poundshops', and so on, all depend on a global economy of staggering inequality of income, life chances and survival prospects. Increasingly, it is the case that products both originate and end up being discarded in similar squalid conditions of unregulated work practices, miserly pay 'turbo' exploitation. In between they enjoy an increasingly transient ride as shiny 'must-have' consumables in societies of astonishing wasteful excess.

6 Appendix

Fordist and post-Fordist planned obsolescence compared

(A tentative and incomplete attempt at classification.)

6.1 'Fordist' obsolescence

- Analysed in Packard's, Papanek's and Illich's contributions

- Driven by technical and stylistic 'in-built' obsolescence.

- Organisation of niche product webs relatively under-developed.

- Large number of few product lines, that is, millions of very similar products based on standardized, long-run components.

- Large buffer stocks to meet additional demand and facilitate repairs and replacement.

- Product differentiation based around yearly or half-yearly cycles. Re-design starts to increasingly give way to re-styling.

- Lots of similar and 'non-useful' waste, that is, finished, whole but broken or unwanted, discarded goods. Vernacular reuse of such waste is possible (repair, adapted use, etc).

- Profits increase via repair and replacement due to poor durability.

- Planned product obsolescence openly advocated as a motor of increased sales and profits.

6.2 'Post-Fordist' obsolescence

- Analysed in Gorz's and Lodziak's contributions.

- Driven increasingly by accelerated stylistic obsolescence and the linking of products into webs which necessitate obligatory consumption.

- Fewer numbers of far more products and product lines, that is, fifty different styles of toothbrush, screwdriver, computer mouse etc.

- Computer-based component and stock control results in fewer and smaller buffer stocks.

- Increasingly rapid product differentiation and self-conscious restyling. Design cycles shorten markedly.

- Lots of re-usable waste, that is, components which can be revalorized and are often increasingly designed to be so, as well as an increasing amount of superfluous waste (packaging, etc) which is not so easily recoverable for either industrial or vernacular reuse.

- Increased revenue via add-on services, obligatory consumption, warranties etc.

- Product obsolescence is denied while product change is openly promoted as a consumption opportunity.

Of course, the demarcation between Fordist and post-Fordist planned obsolescence is not absolute, rather a mixture pertains; not all goods are amenable to the material processes associated with post-Fordism, however, it has allowed for the elaboration of planned obsolescence in ways that Fordist production logic and processes could not support.

Indeed, if we accept that both technical and stylistic obsolescence are characteristics of Fordism (assembly lines, mass production, standardised components, etc) then we must admit that Ford himself was late coming to Fordism. Initially, he eschewed techniques of planned obsolescence and it was actually General Motors, under its head Alfred P. Sloane, who first introduced techniques of planned obsolescence into the automobile industry: the 'Sloaneist' mode of production anyone?

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