THE VALUE OF WASTE

Dr. Michel van Dartel
Hanze University of Applied Sciences, Groningen

Dr. Anne Nigten
Hanze University of Applied Sciences, Groningen

Abstract

This paper argues that a first step in finding a sustainable solution for the pressing global issue of 'waste', is to consider waste a value attribution rather than a material condition. Doing so means a shift in focus from finding more efficient ways to 'clean up the mess' to changing the way in which value is attributed to things. The paper looks at a selection of recent literature on value systems to identify useful concepts and theory for a value-based solution to waste. Furthermore, art and design are proposed to explore and probe such potential solutions.

Introduction

Where there is consumption there is waste. But what *is* waste, really? When we think of waste, we think of discarded materials, of things no longer of use to us, or of things that we never required at all. Waste refers to things and materials, but does this also mean that waste is a condition *of* that material? Looking at the lifecycle of materials, it seems that where a material is within that cycle determines whether it classifies as waste or not: What remains after consumption is usually waste, as it has no value to the consumer anymore; when those remains can function as raw material for another product however, then this same 'waste' material may not be discarded after consumption but passed on to a producer in whose hands it instantaneously gains value again (e.g., McDonough, & Braungart, 2009). The observation that the same material can be invaluable waste to a consumer and valuable raw product to a producer suggests that waste is not a condition of the material, but a value attributed to it by actors in its lifecycle. If every waste material is a potential source material for a new product however, can one even say there is such a thing as waste at all? Defined in terms of material cycles, waste at most seems to be a stage in which materials are attributed very little or no value. But if waste is indeed an attribution of value, instead of a condition of the material itself, then shouldn't problems related to waste be addressed by looking at the value systems that underlie these attributions? At present, it seems that the main focus in finding solutions for waste problems is on looking for more efficient ways to process waste materials and other forms of 'cleaning up the mess'.

In the below, the argument that waste is a value attribution rather than a material condition is further supported by illustrating how the same material can be attributed very different values at various stages in its lifecycle and how even *im*material things can be or become waste. The argument informs a critical look at the dominance of the market in determining value and at its current capitalist nature. Art and design are proposed to explore and probe how changes to, or alternatives for, our current value systems might reduce the growing amount of waste in the world.

Waste: A material condition?

The food industry is a very illustrative example of a domain in which materials move in rapid lifecycles from product to waste and back again. Already during the harvest of crops the edible parts are collected while the remains are regarded as waste and thrown away or left to rot. A part of this rest-material is not regarded as waste for very long however, as it is used as compost for other crops, pressed into bio-raw materials for recycled products, or gleaned by the poor (Cruickshank, 2007). Of the fruits and vegetables that *are* harvested, many also do not make it to the marketplace; for instance because the product does not meet certain cosmetic criteria (Bloom, 2010). Much of this wasted food

is however perfectly viable for consumption, which is why many initiatives by governments (see e.g. FAO, 2011) as well as corporations (such as French supermarket chain *Intermarché* (see Baker, 2014)) aim to lower cosmetic standards held by producers, retailers and consumers. Of all the fruits and vegetables that *do* make it into the supermarkets however, a large part is never sold because the product got damaged or did not sell before its sell by date. While shopkeepers moreover discard these products as waste, so-called 'dumpster divers' value these products completely different and retrieve them from supermarket bins. Some dumpster divers even fully suffice in their food necessity on the basis of retrieving such waste from the bin (Hoffman, 1993). The average consumer is however less economical when it comes to wasting food. US households for instance throw away around 25% of their groceries due to over-preparation, bad planning, impulse or bulk purchases, spoilage, confusion over label dates, or simply undervaluation and lack of awareness (Bloom, 2010). In the end, nearly 50% of crops are wasted on the route from farm to fork (Stuart, 2009). Many actors in the lifecycle of crops, the individuals and organisations that for instance glean, recycle, compost, or dumpster dive, illustrate how simply attributing something a different value can alter a material cycle and move it from being worthless to being valuable again. Waste therefore does not seem to be a condition of the material itself, but a mere attribution based on the values held with respect to the material at a certain point in its lifecycle. These values are subjective and can be changed.

More support for the argument that waste is a value attribution rather than a material condition can be found looking at how also *im*material things can be wasted, such as time, traditions, or data. Time, for instance, is wasted when we do not use it in an economic way. How we value our time does however not only depend on the type of activities that were carried out, but also on the conditions under which these activities were carried out. Doing nothing during work time may for instance be regard as wasted time, but in our spare time this may have been just what we needed. What is regarded a valuable way to spend time, or waste it, seems to depend on how it meets the economic standards of our cultural paradigms. It is not a condition of the time spent itself, but a value that is attributed to it. The fact that even *im*material things such as time can be wasted underlines that the notion of waste does not refer to a material condition but to the value attributed to it. This begs the question how such attributions of value are formed.

Waste issues and the market

Actors in a material's lifecycle attribute values to it and thereby determine whether something is waste or not. These attributions of values are based on the value systems used by the actor. Although non-financial values, such as inherent or moral values, are certainly taken into account when establishing the value of something, in today's capitalist society we increasingly rely on the market to simply 'set the price' (Patel, 2009). Take our earlier example of attributing value to time for instance: Time is often regarded wasted when it is not spend productively with respect to certain market demands. The role of the market is arguably even stronger in the food example discussed earlier. Producers only waste crops for example when the market dictates that more detailed harvesting is not profitable anymore, just as retailers waste products as soon as they no longer meet certain market standards and consumers are inclined to waste something when the price of a new product is low enough to waste the older one.

The relation between waste and the market is more complex however. Besides setting a price, on the basis of which one may decide that something is waste, there also is a market *for* waste. In this 'waste economy' the relation between supply and demand of various types of waste determines a price for it, which subsequently influences the amount of waste produced and how it is processed (Clapp, 2001). The price of waste will influence the amount produced, as a high demand for a certain type of waste will for instance encourage actors in this waste economy to produce it (or label it as such). Similarly, the price of a certain type of waste will influence how much investors are willing to invest in its processing, thereby determining how such waste is processed or if it is processed at all.

These examples illustrate that if waste is a value attribution and the market is the dominant value

system on which these attributions are based, then problems related to waste are directly related to the market economy. According to Sandel (2012), the main problem with the role of the market in environmental issues is that a market has no morals. Take the oil industry for example. This industry's waste inflicts great damage to nature all over the world, which varies from oil slicks to the waste materials that result from 'fracking'. While millions suffer from the waste produced by this industry and ecologies are irreparable damaged, such practices continue to exist as governments, corporations and landowners profit immensely from it (Silverstein, 2014). Not only do these actors in the industry make money from selling its product, much of the profits made in this industry are specifically tied to the waste produced and pollution caused by it. Servicing in the cleaning, containing, or exporting of waste and pollution make lucrative enterprises, not to mention the large profits that are made by governments and landowners through direct payments from the industry to compensate for ecological damage or, perhaps better phrased, to buy off responsibility. Although one could argue that the cost will deter the polluter, history teaches us that reducing environmental damage to a redeemable entry turns it into nothing more than a budget item on the account (Sandel, 2012). While we moreover tend to believe that we make conscious decisions about what can be discarded and about what acceptable consequences of this value attribution are, in practice we moreover rely on the market to attributes values to things, by simply setting the price. Whether it concerns some kind of product or a piece of nature, when the market sets a price for something it also marks it as potential waste, without any moral limit.

The effects of the market's lack of moral become particularly clear when looking at the globalisation of the market for waste. In this global market, waste is constantly relocated from the place where it is produced to the place where it is cheapest to process or dump (Clapp, 2001; Minter, 2013). Also there, those making business out of relocating waste as well as those forced into working the global scrap yards and waste piles in search for something sellable, usable or edible are attributing waste a value, and by doing so (intentionally or not) may increase the demand for it. Paradoxically, ending the ethically unjust practice of global waste dumping is highly undesirable to those that sustain themselves on the basis of what they scavenge from a global thrash heap. Despite the abominable conditions under which most of them live, they depend on the thrash that is dumped. In this way, the globalisation of our waste economy has given rise to complex ethical questions, but also underlines that waste is a value attribution that heavily relies on the market. The value systems used by people that waste material and by those scavenging the global waste heaps that result from it will fundamentally not be very different; what *is* very different are their perspectives on the material, which are informed by their economic conditions.

The market determines if and how waste is processed both on a local as well as on a global level. If there is not a great demand for potato peels for instance, they are virtually worthless and local producers will moreover simply discard them. Only when one collects a large pile of potato peels they may become worth something, e.g. as compost. When the demand for such compost is sufficient and the price of large quantities of potato peels exceeds the cost of collecting them, potato peels are suddenly no longer considered waste but a commodity for trade. Whether we believe that it is better for potato peels to be recycled for use as compost or to be discarded does not seem to matter. We simply rely on the market to determine this for us by setting the price (Patel, 2009). Just as the market determines how waste is processed on a local level by setting the price, it also dominates where waste is processed on a global level. Since in a global capitalist market supply always moves towards where there is demand (to maximise profit) waste will automatically move to the poorest economic climates on earth, disregarding any moral convictions we may hold against such practices. In general, the market determines whether something is waste or not, disregarding the consequences thereof. But even besides such moral convictions, given current global waste problem one may also simply conclude that the market currently considers too many things waste.

Given that the market is blind to the moral problems surrounding waste, and ignorant to the fact that there is too much waste, we may conclude that the market as we know it falls short as a dominant value system. If so, can we imagine an alternative value system that results in attributions of higher values to things currently considered waste? Or can we reshape our market into one that is driven by

necessity and directed at our general well being, rather than merely driven by profit and only directed at accumulating wealth?

Value systems

According to Patel (2009), our faith in the market to 'set the price' is misplaced because the market ignores many ecological and social costs involved in production. Instead, these costs are for instance paid by our environment in terms of damage to our ecologies or by low-wage workers through poor labour and living conditions. A hamburger sold for $1 in the US was for example recently assessed to involve around $200 in eco-systemic costs and can of course only be sold at $1 because most fast-food restaurant employees earn only just over $2 an hour (Patel, personal communication, March 25, 2014). In other words, the price of a hamburger can only be set at $1 by a market that is ignorant to most of the costs involved in producing it. This is directly related to the nature of our capitalist market economy. Capitalism's defining feature is that trade, industry and production, are operated for profit rather than necessity (Braudel, 1982). Our social, ecological, or basic human necessities in principle play no role in a capitalist market. Unfortunately, desires to live in a clean environment or for global equality are much more necessities than they are commodities that may lead to economic profit. This results in that paying for costs related to waste is generally avoided where possible (Stuart, 2009). If ecological and social costs *would* be calculated into the price however, this does not mean that the market will automatically also actively prevent the production of waste. According to Patel (2009), the underlying problem with our faith in the market is that price is a much too limited way to articulate value. Sandel (2012) subscribes to this conclusion and argues that most ecological and social values cannot be expressed in terms of money. Doing so will only lead to the 'buying off' of ethical obstacles. Organic meat, for example, is more expensive so the animal has a relatively better life, but do we not also buy off our guilt about slaughtering the animal for our consumption? The same point applies to the human and ecological suffering that is behind many of our consumer products, such as the $1 dollar hamburger mentioned above. Once the market sets a price for it, human and ecological wellbeing becomes a tradable commodity. And once commoditised, anything carries the risk that it will become waste when demand falls.

Quite a few economists, sociologists and philosophers aim to develop more sustainable economic models than our current capitalistic one. One example is *The Blue Economy* by Gunter Pauli (2010), who claims that it is time for a *re*-industrialisation in which we move from competition over costs, a model in which junk will unavoidably rule, to one that competes over quality. Its crux is the shift away from corporations that are specialised in one core competence to businesses that hold a portfolio of competences that together generate benefits for business and society. While one of these competences may for instance result in waste product, another could be directed at recycling or upcycling that waste.

Another ambitious attempt at a more sustainable economic model can be found in the work of geo-scientist Klaas van Egmond (2014), who claims that many important historic developments can be characterised by a structural change from ecology to economy, which is to say, to material affluence. In other words, where 'civilisation' is gained, nature is usually lost. While human ambitions are already outgrowing the (material) capacity of our physical earth, van Egmond claims that we have yet to start the discussion on the 'quality of life' we aspire. In short, van Egmond claims that we should first better define the 'quality of life' we aspire, to subsequently shape our societies and economies around that ideal, which seems to be the reverse of what we are currently doing. In terms of waste this could imply that we first define how much and what kind of waste we find acceptable, before even considering producing any.

To Naomi Klein (2014) such an inventory is not even necessary. In her view our ecology is demonstrating clear signs that our so-called free market only leads to disaster. Klein suggests a radical shift to a regenerative economy in which capital assets are defined in terms of their influence on our wellbeing. Translated to the global waste problem this could be interpreted as a call to ban out waste through a massive reevaluation of our ecological and social capital.

Such ideas on post-capitalist value systems are greatly important in addressing the ever-growing amount of waste produced, but can be difficult to test in practice as they moreover imply the implementation of large-scale systemic and social changes. Art and design however can put such ideas on value systems into practice, through objects, installations, performances and interventions that may provide a proof of concept or generate discussion (Nigten & van Dartel, 2014). By doing so, these artists and designers may serve as agent of change that instigate the large-scale systemic and social changes required in the longer term to make the transition to a value system that greatly reduces, or even eradicates, waste.

Exploring alternative value systems through art and design

Artists and designers have generated discussion on values and value systems through a long history of turning materials and objects that are attributed little or no value into valuable pieces of art or design. Think of artists that use waste as raw material for an artwork for example (see e.g. Thomas Hirschorn's reflection on the notion of 'quantity' through his work *Too Too Much* (2010)), portrait it (see e.g. Edward Burtynsky's *Burning Tire Pile #1* (1999)), or present it as 'objet trouvé' (such as Marcel Duchamp's famous *Fountain* (1917)). By doing so, these artists, in a manner of speaking, say that we should look at these objects or materials in a different way, because there are special shapes, patterns or colours to admire for instance, or because there is a symbolism or deeper meaning to discover. This can even be done with immaterial waste, as was recently demonstrated by artist Maarten Hunink (2014) in an attempt to exhibit the act of 'wasting time' to emphasise the value of occasionally not doing anything at all. What matters in such examples are aesthetics, poetics or symbolic values, and moving our focus to these other aspects to change the value we attribute. This makes any piece of waste potentially valuable in the hands of an artist or designer; something many artists use to explore and influence the value attribution that waste is.

Besides this relatively straightforward way in which artists and designers change the values we attribute to things, by framing and redirecting our attention, other artists and designers address our value judgements more directly. For instance by directly intervening in value systems at work in real-life situations. Take the unconventional art project *Turtle 1* by Melle Smets and Joost van Onna for example, which was realised in a town called Suame Magazine in Ghana, where 200.000 highly specialised mechanics live off the restoration and reuse of parts from car wreckages collected from all over the world (Boomen, 2014). Globalisation plays an important role in this collection process: As when possibilities to ship materials across the globe increased over the past decades, also the possibilities to ship waste from a place where it is regarded as waste to a place where it is seen as valuable increased. In an effort to study the informal economy of Suame Magazine through an art project, Smets and Van Onna decided to move *against* the market-driven stream of car wreckages being transported to Ghana. Instead, they set up a team of local mechanics in Suame Magazine to built a car at this global scrapyard and subsequently export it to Europe.

Figure 1. Turtle 1 by Melle Smets and Joost van Onna (Photo: Teun Vonk)

Besides resulting in the first car to have ever been exported to Europe from Ghana, the project also led to a detailed development plan to increase the commercial value generated from the car scraps dumped in Suame Magazine. This intervention in the local informal economy, once implemented, may arguably improve the living conditions of the mechanics by increasing the value they generate from the car scraps. However, improving the economy of Suame Magzine also means sustaining a global waste economy that is morally unjust. The internal ethical conflict that the project generates by increasing the commercial value that the mechanics produce from the scrap, while simultaneously sustaining a practice based on inequality, elucidates the ethical complexity of our global waste economy.

In the context of Energize Festival in 2013, an art and design biennial focused on sustainability issues that is organized by Hanze University (see http://energize-festival.nl/uk/), researcher groups at Hanze University initiated a series of experiments that dealt with waste by intervening in the way value is attributed. One group of students for instance experimented with bio-based materials, the source for the bio-based economy as outlined by Pauli (2010), and studied its design properties. It was striking to observe that while working on this design intervention, the students also took their own *market value* as future bio-based designers in mind. It seems that such a designer profile is already adding to the value of a design portfolio, ultimately leading to a higher value of products *made from* waste (on the basis of bio-based materials) than products that *result in* waste.

The abovementioned art and design projects illustrate the very different ways in which art and design can explore the relation between value systems and the production of waste through objects, installations, performances and interventions. By doing so, these artists and designers may instigate openings, however small, to the large-scale systemic and social changes required to make the transition to a model in which the production of waste is greatly reduced, or even eradicated.

Discussion and conclusion

While a recent trend in philosophy argues that better solutions for waste problems may hide in a stronger focus on the agency of materials, instead of on more human-centred solutions (Bennett, 2010), this paper argues that for a long-term solution it is impossible to ignore the role of human value attribution in the production of waste. Although waste problems undeniably have material 'symptoms', the above shows that our value attributions form the underlying causes of such symptoms. While considering waste as a material condition can only lead to solutions that address the material discarded as waste to be cleaned up, looking at waste as an attribution of value unavoidably shifts our focus towards our value systems and how waste can be prevented.

As argued in the above, strong ideas on how to change our value systems in order to reduce waste production already exist, but their agenda's are moreover too big to unfold all at once. Art and design projects, however, can probe some of these ideas, test aspects of their bigger philosophy, or form proof of concepts for their general systemic. By doing so, such projects in the least make way for a critical discussion on the relation between value systems and waste. While projects such as Duchamp's famous *Fountain* or Hunink's *Doing Nothing* mentioned above make us aware of the subjective nature of the value attributions that lead to waste, a project such as Smets and Van Onna's *Turtle 1* addresses problems related to waste more directly by intervening in value systems at work in the real world.

To have their desired effect however, such art and design projects should be critically evaluated, compared and related to research outcomes in related domains. Only that way will the critical discourse emerge that is necessary for these art and design perspectives to be heard and will their potential as agents of change be realized. This position paper is a modest attempt at doing so and will form the conceptual basis for a longer-term research project on the theme *The Value of Waste* at Hanze University. The artistic and design outcomes from this research project will be revealed during the second edition of Energize Festival on 5 – 7 June 2015.

References

Baker, J. (2014) French Supermarket Highlights Ugly Fruits and Veggies Instead of Wasting Them. Retrieved 29 October 2014 from Ecowatch, http://ecowatch.com/2014/07/22/french-supermarket-ugly-fruits-veggies/

Bennett, J. (2010) *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press.

Bloom, J. (2010) *American wasteland: How America throws away nearly half of its food (and what we can do about it)* Cambridge, MA: Da Capo Press.

Braudel, F. (1982) *Civilization and Capitalism, 15th-18th Century. Vol. II. The Wheels of Commerce*. London: Collins.

Burtynsky, E. (1999) *Burning Tire Pile #1* [photograph]. Toronto: Nicholas Metivier Gallery

Clapp, J. (2001) *Toxic exports: The transfer of hazardous wastes from rich to poor countries.* Ithaca: Cornell University Press.

Cruickshank, R (2007) The Work of Art in the Age of Global Consumption: Varda's Les Glaneurs et la glaneuse. *L'esprit Créateur* 47:3.

Duchamp, M. (1917) *Fountain* [objet trouvé]. New York, NY: Studio Alfred Stieglitz

Egmond, K. van (2014). *Sustainable Civilization*. New York, NY: Palgrave

Gustavsson, Christel Cederberg & Ulf Sonesson (2011) *Global food losses and food waste: Extent causes and prevention.* Rome: FAO & SIK.

Hoffman, J. (1993) *The Art & Science of Dumpster Diving*. Port Townsend: Loompanics Unlimited.

Hirschhorn, T. (2010) *Too Too Much* [sculpture]. Deurle, Belgium: Museum Dhondt-Dhaenend

Hunink, M. (2014) Doing Nothing [performance]. Rotterdam: V2_ Institute for the Unstable Media.

Klein, N., (2014) *This Changes Everything: Capitalism vs. The Climate*. New York: Simon & Schuster

McDonough, W., & Braungart, M. (2009). Cradle to cradle: Remaking the way we make things. London: Vintage.

Minter, A. (2013) Junkyard planet: Travels in the billion-dollar trash trade. New York: Bloomsbury Press.

Nigten, A. & Dartel M. van (2014) Towards Ecological Autarky. *Leonardo*, 47(5), pp. 494 - 450.

Patel, Raj. *The Value of Nothing: How to Reshape Market Society and Redefine Democracy*. New York: Picador, 2009.

Pauli, G. (2010) *The Blue Economy: 10 Years, 100 Innovations, 100 Million Jobs*. Taos, NM: Paradigm Publications.

Sandel, M. J. (2012) *What money can't buy: The moral limits of markets. New York: Farrar, Straus and Giroux.*

Silverstein, K. (2014). *The secret world of oil*. London: Verso.

Stuart, T. (2009) *Waste: Uncovering the global food scandal.* London: W. W. Norton & Co.

Boomen, T. van den (2014) *Turtle 1: De auto uit Afrika.* Amsterdam: Fosfor.