



The power of ignoring waste

- a systematic characterisation of what has been left unregulated

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Abstract

Waste is an inescapable product of economic activity. As we now face a world economy, the waste problem is also increasingly an international one and needs to be handled as such. This thesis investigates what type of economic processes that have received attention from the international community for their role in waste creation, but focuses primarily what type of processes that have been ignored. Consumption, exports of goods and processes involving non-hazardous waste are found to have been systematically ignored. The main theme in the analysis is the imbalanced regulation created by ignoring certain waste problems whilst pushing for economic growth and liberalisation. The analysis also raises concerns about the exposed situation of developing countries. The major novelty in the thesis is the combination of two previously separated fields of social theory; industrial ecology and neo-gramscian analysis of power.

Keywords: Ignored waste problems, industrial ecology, political world economy, international regulation, elitist power.

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1. Introduction

The world now faces a long series of huge environmental challenges. Here are just a few voices from a concerned scientific and political community: “Around half of the world's rivers are seriously depleted and polluted” (World Commission on Water, 1999). “Human health and environmental quality are undergoing continuous degradation by the increasing amount of hazardous wastes being produced” (United Nations, Agenda 21, 1992, ch20 §20.9). “Many natural systems are being affected by regional climate changes, particularly temperature increases” (IPCC, 2007, p8). All of the above challenges and many others are somehow connected to waste.

At the core of this our waste problem lies a political world economy with an enormous throughput of materials. To illustrate, an average European presently require about thirty tons of waste output annually. For the average American, that number is seventy tons (adapted from World Resource Institute, 2000, p13), whereof about a ton is considered hazardous waste (OECD statistics compiled in Krueger, 1999, p13). These lifestyles supported by the world economy are simply not sustainable.

The scientific field sometimes termed industrial ecology, represented in this thesis primarily by the work of the World Resource Institute, provides a useful perspective on the world economy. Within this field, economies are envisioned as similar to organisms. The economic processes of extraction, production, consumption and waste creation can be seen as metabolic, i.e. using resources from the environment to sustain the organism and returning them in a less degraded state, relying on the biosphere to handle the recovery (World Resource Institute, 2000, p1f). As most organisms economies can be healthy or sick, thriving or starving and in or out of balance with their supporting ecosystem. An essential part of this potential balance is sound waste management. In this thesis, sound waste management of an economic process is assumed to be represented by this generally accepted hierarchy of principles; (i) waste avoidance, (ii) reduction of quantities and toxicity at source, (iii) recycling, resource recovery and reuse and finally (iv) environmentally sound disposal.

The political world economy can be seen as the aggregate of all national “organisms”, as such it contains both extremely poor and extremely rich states. And some of them lack the ability to control their metabolisms and waste management, partly because of a lack of technical and political capacity, and partly because of the transboundary nature of the waste problem (for example Kreuger, 1999, p84). The situation of these countries is particularly exposed due to international pressures, economic and other. Companies find it cheaper to pollute and manage waste in developing countries (ibid, p20). Public opinion in developed countries is strongly opposed to local management of wastes (the Not In My BackYard syndrome, NIMBY) and siting of waste management facilities there is increasingly difficult, promoting what has been called waste distancing to developing countries (Princen et al., 2002, p160). These pressures can be placed in the larger context of the

economic globalisation process in which developing countries more or less willingly are brought into global-scale systems for production, consumption and trade (ibid. p159). In the face of these challenges to developing countries, I believe that there is a need for international legislation and/or regulation to help these states achieve sound waste management and relieve systemic pressures to pollute. There presently exists a number of such pieces of legislation, for example the Kyoto Protocol and the Stockholm Convention on Persistent Organic Pollutants.

International environmental legislation generally can be seen as an act of balance between different economic interests and environmental protection (Kreuger, 1999, p1). In the case of international waste politics, there is cause for concern that the current balance favours the short-term economic interests of the already rich, instead of the interests of the poor, future generations or the environment. Firm commitment to sizeable reductions in carbon dioxide emissions has for example been a rare commodity in the developed world (for example Elliot, 2004, p90) and North-South tensions have become a prominent feature of international environmental relations. In addition, and it almost feels superfluous to point it out, governments of poor countries does not necessarily represent the poor, leaving no one to speak for them in international forums.

The balance between interests is reflected not only in the agreements written, which are quite well explored, but also in what has been kept from even being discussed at the highest level (of which we know much less). This insight comes from the neo-gramscian field of social theory, in this thesis represented primarily by Steven Lukes. Political power can in his conception take three forms; (i) power over the political decisions taken, (ii) power over the agenda and (iii) power over the ideology of the political system. In short, the powerful of the world might have the capacity to stop uncomfortable questions from ever being discussed (for example Lukes, 2005, p27), leaving only “safe” issues on the agenda of for example international conferences on the environment, as well as power over the outcomes of the conferences themselves. In light of this perspective, we should ask ourselves whether the interests encompassed in the international community’s position on waste issues might be even narrower than we previously thought. This suspicion leads me directly to the purpose of this thesis.

1.1. Purpose and goals

The main purpose of this thesis is to contribute a critical review of the international community’s position towards managing the world’s waste problem, especially it’s tendency to ignore certain pressing issues. This form of exposure of the narrow interests encompassed within the political world economy is, I believe, a vital step towards a society based on sustainable and egalitarian principles. Within this broad critical ambition, I also wish to discuss the consequences of the narrow scope of international attention to the waste issue, primarily for the developing countries.

My goal in this thesis is to create an analytic framework which allows me to systematically identify which waste creating processes that have been regulated or

ignored by the international community, and to characterise the processes in each group according to relevant criteria. The framework incorporates the major innovation of this thesis which is the combination of two previously separated disciplines, industrial ecology and neo-gramscian analysis of power. Both disciplines are perspectives on the political economy, one analyses material structures, the other structures of power. Together they constitute a more complete dual perspective on the structures of production. My hope is that the results from the framework will contribute to opening discussion on both the ignored waste issues and on the mechanisms that creates that ignorance.

1.2. Research question

What characterises the economic processes whose part in waste creation have been given attention or ignored, respectively, by the international community?

This question builds upon my understanding of how power can be exerted to influence the international community's position towards a specific waste creating process. It also follows my assumption that it is the characteristics of the process in question, and the interests involved, which determine the position of the international community. Finally, it rests on an industrial ecology perspective that focuses on economic processes. Put in other words, the question identifies two outcomes and demands a deeper review of the explanatory variable sketched out by a theory not previously used on the subject, i.e. a neo-gramscian view on power.

2. Methodology and method

In this chapter my objective is discussing how to best answer the research question. My first step to that end is to review existing research and outline what sort of method that is needed to further our understanding. I conclude that a model based on industrial ecology is a good way to proceed, the construction of such a model is discussed next. I also define the two outcomes identified in the research question.

2.1. Outset

What has previously been said about the international community's position in the waste issue? The answer to this question is of vital importance to the possibilities of this thesis. As I hinted at in the introduction, parts of the international community's position have been quite well explored while others have received much less scientific attention. The existing international environmental agreements definitely fall within the former category (see for example Lagerkvist, 2006, p277) and a myriad of texts have been produced on for example the North-South tensions or other clashing interests in the context of the Kyoto Protocol or Basel Convention. There is consequently no need for me to do anything but rely on previous research in handling these parts of the international community's position.

That these agreements, at the centre stage of international politics, have received so much attention is easily understood, data is readily available, power relations visible and behaviour easily observed. This is not the case for the more "periphery" or excluded political issues. After all, it is only natural that one has to look harder, and more creatively, to see that which is kept from sight. As a result, there is a lack for consistent research of this field of issues, there exists only sporadic critiques of the international community's ignorance of certain specific issues. Hence a systematic overview of the excluded issues must be my primary focus in this thesis. It is worth remembering here that my insistence on the importance of the excluded issues spring from the wider than usual definition of power which I borrowed from Steven Lukes. From his perspective, the issues that have been excluded from the political agenda are those with the most, not least, potential to change society.

Besides merely identifying ignored processes I need to classify them. I have found no predefined such classification system, but there is much material available to build from, so constructing a simple classification should prove easy. A method which allows me to perform the dual tasks of identifying and classifying ignored processes is outlined below.

2.2. A contrafactual model

Identifying what Steven Lukes names *potential issues*, excluded political issues where the hegemonic position is so dominant so that no overt conflict exists, is never simple, always a reflecting and painstaking process with high demands on intersubjectivity. The concept of potential issues is not an uncontroversial one. It

implies that marginalised and suppressed groups have real, objective, interests which they fail to realise themselves. Many have objected to Steven Lukes' theory on the grounds that if anyone could possibly know what was in the best interests of the marginalised, it would be the marginalised, not a researcher behind his table (Hay, 2002, p179). In other words, there is reason to be concerned that the scientific process becomes a wholly subjective one (for a discussion on the theoretical, not methodological, aspects of this question, see the next chapter).

To counter that threat (of subjectivity) and structure the process I will use a contrafactual model based on work of the World Resource Institute. The Institute's founders described it as "an institution that would be independent and broadly credible, not as an activist environmental membership organization" (<http://www.wri.org/about/>). Their research is in other words an example of mainstream, as opposed to radically charged, environmental theory. The advantage of using their conceptual model is that although the purpose and starting point of this thesis is a highly critical one, the results have thus been moderated and can be accepted irrespective of normative position. In my opinion, if I despite these limitations to my critique still find the international community's position lacking, my results will be both more focused and more powerful.

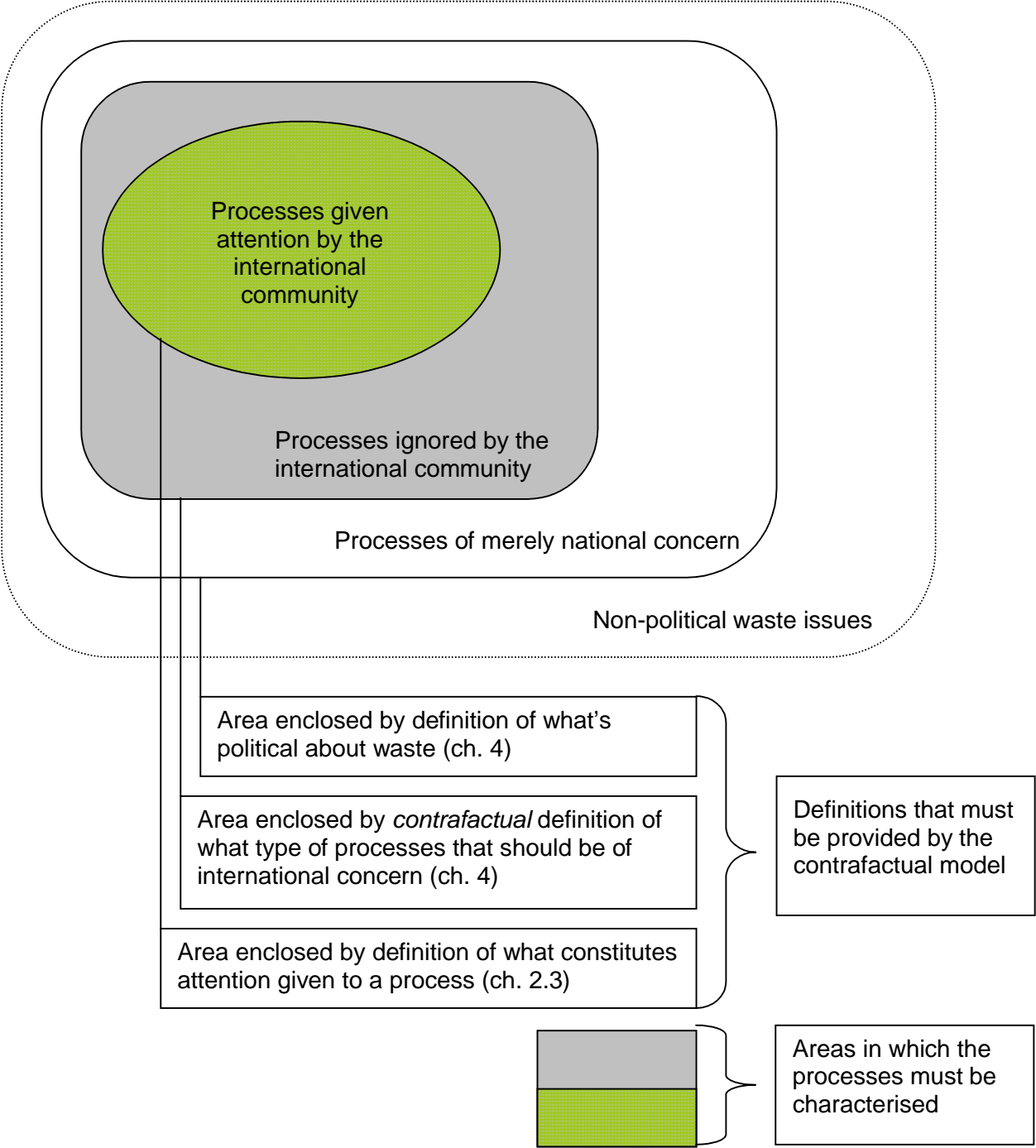
The WRI conceptual model of waste creating economies can be firmly placed within the emerging scientific discipline of industrial ecology. The model is the outcome of the Institute's two reports which studied the inputs and the outputs, respectively, of industrialised economies. It was originally developed as part of an accounting system for the physical flows of the economy, to complement ordinary financial accounting. As such it incorporates normal principles of accounting, all material flows are modelled in such a fashion so that there is no double accounting and there is a balance between the inputs and outputs over an accounting year (World Resource Institute, 2000, p4ff).

In this thesis the model's function and purpose are a bit different. Through the understanding of the waste producing world economy it conveys, it helps define an alternative, or contrafactual, role for the international community in dealing with said economy. Combined with definitions of what could be considered political and international, it defines a population of possible processes potentially subject to international regulation. Within that population, the two groups of processes identified in the research question can be found. The groups are separated through insights from Steven Lukes view on power which will be outlined in chapter three.

The second needed function, besides defining different groups of cases, is as mentioned the classification, or characterisation of those cases. There are a wide variety of possible characteristics of a waste creating process that might be interesting. I have chosen to focus on three that I believe to both the most important and easily observed. First, the type of waste, for example hazardous or non-hazardous. Second, the type of countries involved, e.g. developed or developing. Third, the type of transboundary flow. These characterisations will be further detailed in chapter four. Other interesting characterisations might be economic sector or

economic importance. But including these would unfortunately have been too time-consuming and methodologically difficult, hence they have been excluded. To further explain and illustrate the function of the contrafactual model I have constructed the figure below. It shows a simple representation of the entire waste problem and the different sets of processes within it.

Figure 2.1



The concrete tasks that I must perform to be able to answer the research question is thus; (i) the construction of the three definitions outlined in the graph, (ii) collection of data to fill the innermost circle with cases, i.e. with processes given attention, (iii) the

characterisation of those cases, (iv) the subtraction of the cases in the innermost circle from the area containing processes of international concern in order to create an exhaustive and coherent picture of those processes that have been ignored and (v) the characterisation of the ignored types

2.3. Defining attention and ignorance

This segment provides definitions of the two outcomes of power mentioned in the research question and describes in greater detail how economic processes in these categories might be identified.

In chapter three I outline how elites might exert power over international waste politics and especially how they might suppress certain issues from being discussed. But I must already at this point decide where I, for the purpose of this thesis, draw the line between a “successfully suppressed” or ignored process and an process given attention? Starting from one of the extreme ends of the scale between “given attention” and “ignored”, those issues which have been regulated in international agreements have obviously received some attention. But how much further along the scale can we go before attention becomes meaningless and indistinguishable from ignorance? Rhetoric without underlying commitment is after all a prominent feature of international environmental politics. Even the actual agreements should be viewed with some scepticism as there is a chronic lack of funds, capacity and authority to implement them (Elliot, 2004, p92).

I therefore propose that it is reasonable to use quite a narrow definition of what could be considered attention given by the international community, especially in the face of time and other constraints. In this thesis I will approximate processes given attention with: *processes regulated or mentioned in multilateral environmental agreements*. In identifying these processes I will simply rely on previous research. There is good reason to believe that if an issue has been given substantial attention by the international community, it has likely been given attention by those who study international waste politics as well. My main sources that for this identification is Lorraine Elliot’s “The Global Politics of the Environment” which contains a very good chapter on “the global politics of pollution” (2004, p60-92). Her purpose with the chapter is to empirically ground her own analysis of the major issues in international waste politics (ibid. p1). I rely on Elliot to provide a full and comprehensive picture of those processes given attention by the international community. Those processes not covered by my sources are consequently in this thesis considered to not have received attention.

2.4. Difficulties associated with the method

The method is in a sense quite volatile. The results of the model are highly dependent on two things, the definitions and the collection of data/cases of processes given attention. As to the first problem, it comes with the territory. These kinds of definitions are not preordained or objective, and they reflect power.

Presenting alternatives to them is therefore not an exact science either. But I believe that by not making any extreme claims based on the results, only pointing to the most obvious patterns, my conclusions can be generally accepted. Thereby not said that I shall not strive to achieve the highest degree of exactness possible. But ultimately, the reader must form his or her own opinion of the validity of the results.

The second problem concerning data collection is perhaps less laden with theoretical or epistemological burdens. Very basically, the problem is that if I fail to record a major instance of given attention, it will automatically be recorded as a case of ignorance, multiplying my error. There is no solution to this problem except to be thorough. And once again I must rely on the reader to point out any flaws. I have consciously left out a major field of international legislation, namely such agreements which deal with nuclear waste. The rationale behind this is related to time-constraints but also to the fact that it is a highly special form of waste potentially subject to different political dynamics.

Some might find the method lacking in another aspect. As shown in figure 2.1 and described above, I will only collect data on international - not national or regional - attention. Consequently, some of the processes which I identify as ignored by the international community might even have been regulated nationally by some states. One might argue that it is not the role of the international community to act when regulation is already in place. My choice to despite this structure the thesis in this way rests on the background to the study presented in the introduction. Many developing countries lack the ability to regulate their own (waste-creating) economies (Kreuger, 1999, p84) and need help from the international community to relieve systemic pressures to pollute (Elliot, 2004, p93). Regulation in some industrialised countries does not suffice to protect these exposed states. I would also argue that it is indeed the role of the international community to establish a minimum standard of environmental protection, based on cases of successful regulation by individual states. The establishment of such a minimum standard is not a useless echo of national regulation but a necessary reaffirmation. From this perspective, the international community can and should still be criticised for ignoring already nationally regulated processes.

3. Power over international waste politics

In the introduction I hinted at the disturbing possibility that elites with narrow interests might hold considerable sway over how the international community has dealt with the growing waste problem. This is a highly controversial claim so in this chapter I will attempt to substantiate it by briefly describing the elites and how they might exert their power. The view on power outlined here was first established by Steven Lukes who drew heavily, but implicitly, from the neo-gramscian tradition of thought (Hay, 2002, p179). The main concern for Gramsci, and his followers, was the way in which elites manages to secure the compliance of a broader segment of society through their hegemonic position (Gill, 1993, p49). In the following segment we shall tackle the question of how, but let us first take a closer look at the elites themselves and how their interests clash with those of other groups.

The fact that the global political economy features large, and possibly growing, inequalities both between and within countries should is probably not a surprise to anyone. And within even the poorest countries exist groups of people living in extreme luxury . These people, along with their counterparts in developed countries, are the ones who have benefited from economic growth, sometimes even despite the fact that a majority of the population are now worse of (Todaro & Smith, 2006, p16). The other group of people who as a rule have benefited from the current economic system are the citizens of developed countries. These groups are normally sheltered from the adverse environmental effects of the economy. They have the safest housing, access to medical care, a strong voice in government and so on. It is not unreasonable to assume that the interests of these groups, the global “elite”, are somehow tied to the system which made them rich in the first place and that will probably continue to support them. Other groups in the global community have not been so lucky and could probably benefit from change.

The global upper class might be insulated against the dangers of environmental degradation, but the poor are not. There is much and growing evidence that the poor will take the brunt of present and future waste-related environmental impacts (Parry et al., 2007, p781). Simply more growth is not in their best interest, it is increasingly recognised that what is needed is a new form of growth, one more mindful of social and environmental externalities (ibid. p193), and sound waste management is an important part of such growth. The poor consequently have a greater interest in the introduction of sound waste management than do the rich. As do future generations and the environment itself.

So there seems to be a conflict of interests between the global rich - who has benefited from the current system, probably will benefit in the future and who want to continue on the current route - and the global poor - who have not been so lucky and who would benefit from a more sustainable path. In the next segment I will discuss how one set of interests might dominate over another, following Lukes theory on the three faces of power.

3.1 The three faces of power

The simplest and most easily observed form of power has been called the first face of power. Some, prominently Robert Dahl, have argued that this is the only face which we can scientifically observe, and therefore the only one of concern to us as scientists. It manifests itself through formal decisions taken by political bodies, where the most powerful see decisions go his way most often (Hay, 2002, p172f). In the realm of international waste regulation, a typical case might be vetoing an uncomfortable paragraph of a conference joint statement or successfully proposing amendments to existing agreements. Since I am mainly interested in those issues not subject to formal decisions, this form of direct power is not the primary focus of this thesis.

Of greater interest are the forms of power collectively termed the second face of power. These forms of power are dependent on a not-level political playing field which grants certain persons or groups systematic advantages in defending and promoting their position. This situation has been called the mobilisation of bias which Schattschneider famously claimed was a unavoidable part of politics: "All forms of political organisation have a bias in favour of the exploitation of some kinds of conflict and the suppression of others, because *organisation is the mobilisation of bias*" (1960, p71). Some issues are organised into politics while others are organised out". Barach and Baratz, who first presented the second face of power, claimed that more often than not, those privileged by the bias are a minority or elite group within the population (1970, p43f). The groups privileged in this way have by their dominant position in the political system the power to suppress or thwart latent or manifest challenges to their values or interests before they reach decision-making arenas (ibid. p44). In international waste politics this might for example happen in preparatory committees or informal discussions in the hallways of for example the UNEP. The act of suppressing issues has been called nondecision-making. A hypothetical example, consider a proposal that all production wastes shall be dealt with in the country where the end-consumer lives. Everyone knows that such a proposal would never be supported by the developed countries, so no such proposal is made, even though it might be in the best interests of the developing countries.

The step from this view to that of Steven Lukes is not long but a bit complicated. The forms of power encompassed by the second face are powers over overt or covert conflict. In other words, those who, when subjected to power, alter their behaviour do so in full knowledge that this contradicts their best interests (Hay, 2002, p177). Lukes proposed that an even more insidious and potent form of power is to shape the perceptions of others so that those subjected to power do not even perceive the conflict of interests (Lukes, 2004, p27). As mentioned in the previous chapter, many have found the notion that we have all to some degree been duped offensive (Hay, 2002, p179f). I would suggest that Lukes message is not as extreme as his critics have found it. We simply live in a very complex world of which we know little, but we desperately try to come to grips with it. That we grab onto ideas and perspectives presented to us by authorities, who believe in them themselves, is not

strange or stupid. It is simply human. Michael Foucault has, in my opinion, also contributed to this type of conception of power when he connected power to the production of (always simplified and subjective) knowledge (see for example Hay, 2002, p191) In short, there is power to be had in controlling information, ideology, science, the mass media and the processes of socialisation (Lukes, 2004, p27; Gill, 1993, p47). And that power is unproportionally held by elites which can spread their viewpoints to a broader segment of society and thereby protect and advance the political/economic system that supports them.

Turning to international waste politics specifically, there are a number of dominant perspectives which might serve elite interests. Examples are an overoptimistic view of the capacity of economic growth to solve all social problems; an overemphasis of sovereignty as the main organising principle of international relations; a view of the environment as subordinated the economy instead of the other way round; the opinion that the polluter should pay, instead of for example the consumer. From Lukes perspective, these seemingly neutral views and concepts are power tools with which hegemony, or control, can be established and maintained.

Together the faces of power represent a whole range of opportunities for the powerful which might be used to suppress or avert challenges to the neo-liberal, waste intensive, and highly unequal economic system. In chapter five I will investigate which waste issues that have made it up to the agenda, in chapter six which have not.

4. Potential international waste issues

In this chapter I develop the contrafactual model which will be used to identify waste creating processes, given attention or ignored, and characterise them. In essence, this is a process of identifying and restricting a population of cases. I start with the full World Resource Institute model, which cover all waste creating processes. That model is then condensed by a definition of what could be considered a potential political issue. The remaining cases are then condensed further by a definition of what could be considered an issue for the international community. In the final segments, I use insights from waste management to differentiate between wastes and countries, thus providing the schema which I will use to characterise processes.

4.1. Waste, economy and biosphere

Waste can very simply be understood as the unwanted or unusable matter that flow from the economy to the biosphere. As such it is an integral part of the relationship between these two systems. Within industrial ecology that relationship is described as similar to that between an organism and its supporting ecosystem, i.e. the economy is completely enclosed within and dependent on the biosphere, prominently for neutralisation of waste (World Resource Institute, 2000, p1).

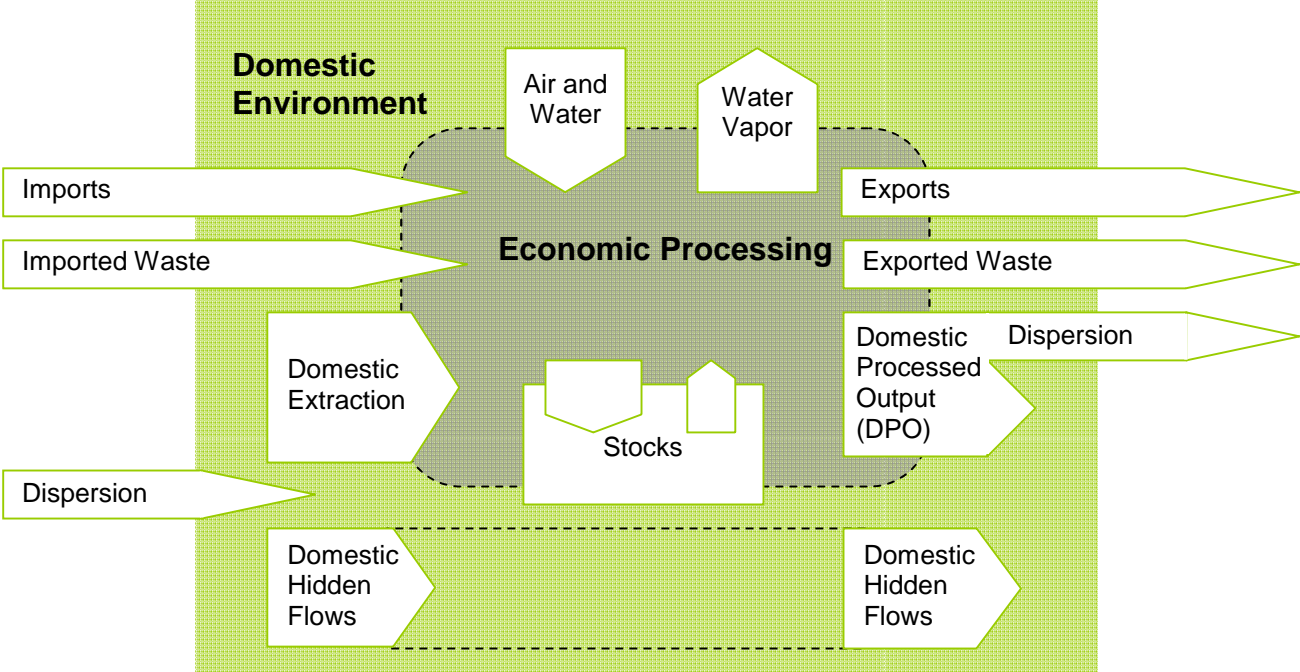
Unfortunately waste is an inescapable outcome of economic activity, an insight derived from the second law of thermodynamics, and it is created at every step in the economic chain, even in recycling (see for example Daly, 1987, p324). All products and services therefore entail some waste, although it may not always be visible to the consumer. Economic activity can be seen as a chain of metabolic processes, extraction (ingestion), production (metabolisation), consumption and some form of waste management (excretion) (World Resource Institute, 2000, p1). These processes are all vital parts of waste creation which should be seen as an integrated unit, implying that it is not only dirty production or inadequate waste management which is the problem but also demand for “dirty” products.

Zooming in on the World Resource Institute (WRI) model, a main feature of the model are the hidden flows which represent flows that never enter the economy as goods, for example earth moved during construction or mining. The hidden flows constitute simultaneous inputs and outputs to the economy. The economy in this conceptual model produces durable goods and other stocks, but in industrial economies about three quarters of all inputs are returned to the biosphere as waste within one year, and all stocks eventually become waste outflows. The model also highlight the transboundary flows of goods, i.e. exports and imports (ibid., p5). There are however two important transboundary flows of waste that have been omitted from the model, natural transboundary dispersion and the export of waste. The later might have been considered a part of the normal exports, but I would argue that such flows represent a wholly different type of flow. To begin with, the accompanying financial flow goes in the opposite direction, instead of receiving money the exporting country must pay for the flow. And most obviously, the flow is not really headed for the

importing country economy, but rather for the importing country environment. Although there are no comprehensive records of waste exports, it is safe to say that it is an important and continuing practise (Krueger, 1999, p14).

Transboundary dispersion was omitted from the model because of measuring difficulties and double accounting issues (World Resource Institute, 2000, p5). These issues are of minor importance to this thesis, which is concerned with potential issues and not exact measurements. And dispersion of all kinds of wastes, especially as a result of emissions into water and the atmosphere, are more than potential problems (see for example Elliot, 2004, p79 or p65). The revised WRI model shown below include these two additional transboundary flows.

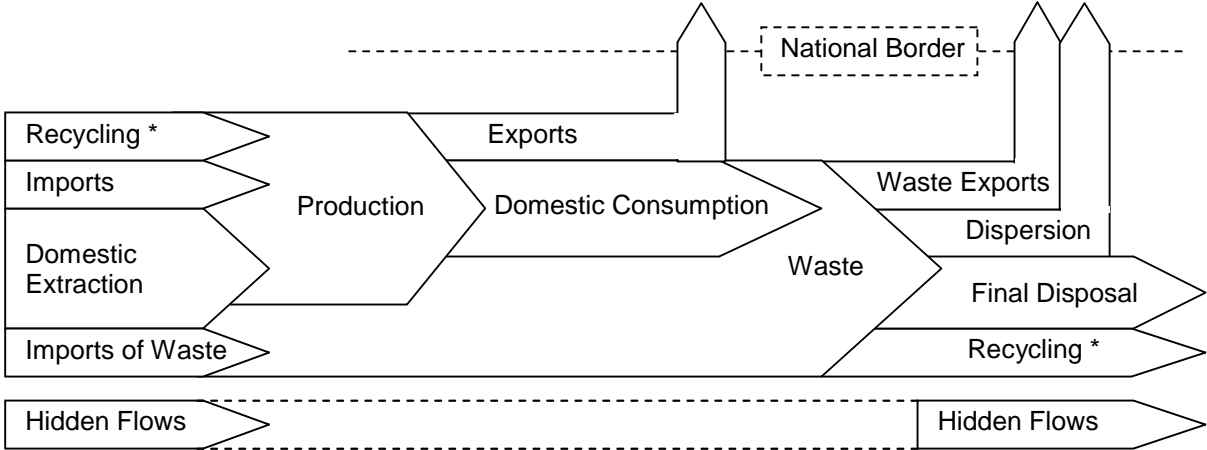
Figure 4.1



To illustrate how this model can be broken down to show more specific economic processes I constructed the figure shown below. I made two additions to the original model; I separated Domestic Processed Output into the categories dispersion, final disposal and recycling and portrayed production and consumption in a more explicit way. To simplify, I excluded exchanges of water and air, as well as the concept of stocks. I must stress that I constructed the diagram principally from my own understanding. In this I followed four principles; (i) no materials leave the system except as modelled flows (inputs equal outputs), (ii) all materials become wastes at some point, (iii) waste is created at every step in the economic process and (iv) that production and consumption can be modelled in the linear fashion of the WRI model, not the circular fashion usually portrayed in economics (although there is some circularity through recycling). The function of this figure is only to give the reader a

picture of the type of processes and flows involved in economic waste creation, i.e. flows that might be given political attention.

Figure 4.2



* Recycling can be considered a loop in the system, but waste is created in the process of recycling as well.

4.2. Defining the potentially political and international

What then, is political about the structure and functioning of the organismic economy shown above? That question can easily be tied to the classic debate about the role of governments in relation to the market. Unfortunately, that debate does not volunteer any easy answers as all arguments rests on some normative foundation. However, in most conceptions of the government-market relationship political bodies should hold some regulatory function, if only to guarantee free competition. Most also recognise that some form of political regulation of the market is needed to guarantee environmental standards, so that development can truly be sustainable (see for example the four diverse environmental worldviews presented by Clapp & Dauvergne, 2005, p6, p9, p11).

So, one potential role of politics when it comes to waste is to regulate economic processes, to achieve what has been called sound or integrated waste management. In this thesis that is understood as four hierarchical principles: (i) waste avoidance, (ii) reduction of quantities and toxicity at source, (iii) recycling, resource recovery and reuse and finally (iv) environmentally sound disposal (from Krueger, 1999, p112). Waste avoidance as a principle can be applied to any type of economic process. For example, political efforts to avoid a certain hazardous waste type could entail a ban on extraction of a component substance, mandatory production standards or efforts to curb consumption. Reduction of quantities and toxicity at source is a matter of regulating production (ibid., p115). Recycling and similar actions can be applied to waste created at any link in the economic chain. For it to be possible, the entire economic chain might have to be constructed so that useful waste materials can be

concentrated and separated (see for example Frosch, 1992, p800). Environmentally sound disposal should be applied as a last resort to wastes created at every link in the chain. Summing up, the regulation of any waste creating economic process is in this thesis considered a potential political issue.

What is an international waste issue? Admittedly, it is not an easy thing to define. In fact, that I can imagine several other definitions than that which guides international regulation today is one of the fundamental reasons why I ever conceived of this thesis. Fortunately I need not come up with a final or generally accepted definition to fulfil the purpose of this chapter. What is needed is a definition which allows me to find the most important issues that have been excluded from top level international discussion. In other words, I need a definition of “international waste issues” which is considerably wider than usual so that I may highlight issues included in my definition but not the other. The potential problem of using too wide a definition can be minimized by later confining my critique to only the most pressing excluded issues.

The widest possible definition is that, since the international community shares only one biosphere and one economy, all waste producing activities are of international concern, i.e. regulation of them is an international issue. This definition opens up for top level regulation of every small detail and is very likely too optimistic of the capabilities of the international community. The state remains the best and most important regulator of truly internal affairs, it should be allowed to continue and indeed be strengthened (Eckersley, 2004, p7). So I propose what I believe to be a reasonable compromise:

All economic processes that involves transboundary flows of materials could be considered of international concern, in the sense that the associated creation of waste might be multilaterally regulated.

This is a simple definition which does not separate wastes from products or inputs, consumption from production or raise any other artificial barriers within the waste issue. It uses “transboundary” as a proxy for “international”, and is thereby well rooted in the current state system, as it recognises territorial sovereignty. It also recognises that although states are the fundamental units of the international community, there are forces beyond their individual control which they need to tackle together. The definition focuses on the flows, not the impacts, of waste. The advantage of this approach is that it incorporates the precautionary principle, all flows are of concern, even if we are not aware of their negative impacts.

It might be helpful when analysing the definition to remember that the transboundary flows mentioned are the three types identified through the WRI model, exports, waste exports and dispersion (through emission of dispersive substances). Note that I have not included imports and waste imports. In the case of the later, it was done to avoid double accounting. This was partly the reason in the former case as well, but I was also concerned that including inputs to production would water down the definition. For example, if a country exports a screwdriver which is later

used to produce huge amounts of toxic waste, the exporters can and should not be held responsible.

4.3. The contrafactual model

This segment presents the contrafactual model(s) needed to identify those waste creating processes of potential interest to the international community. In the above segment I defined that as all types of economic processes which involve exports, exports of waste or transboundary dispersion. The following conceptual maps show the types of economic processes that are involved in transboundary flows and that could receive international attention. In essence, these maps are just condensed versions of the WRI conceptual map. Figure 4.3 shows some export of goods, the production of those goods, the created waste and the consumption of those goods. Figure 4.4 shows some export of wastes, the production and consumption which created it and the management of that waste. Figure 4.5 shows transboundary dispersion of wastes due to emissions and the production and consumption which created that waste. Together they present a comprehensive picture of all those processes which I contra factually propose should be given attention by the international community. There are chains of economic processes which involves several of these transboundary flows, for example export of oil which is then consumed producing transboundary dispersion of greenhouse gases. For simplicity, these will be treated as separate cases of singular transboundary flows.

Figure 4.3 - Conceptual map of exports

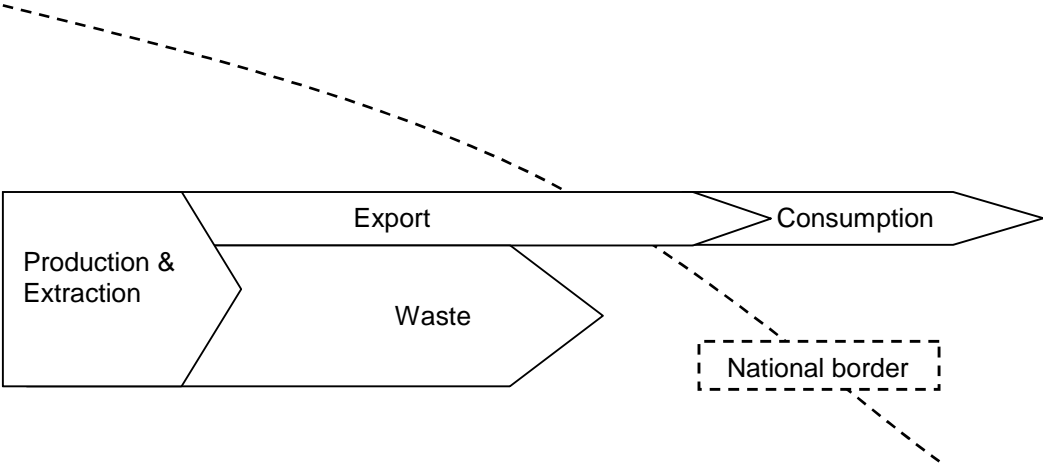


Figure 4.4 - Conceptual map of waste exports

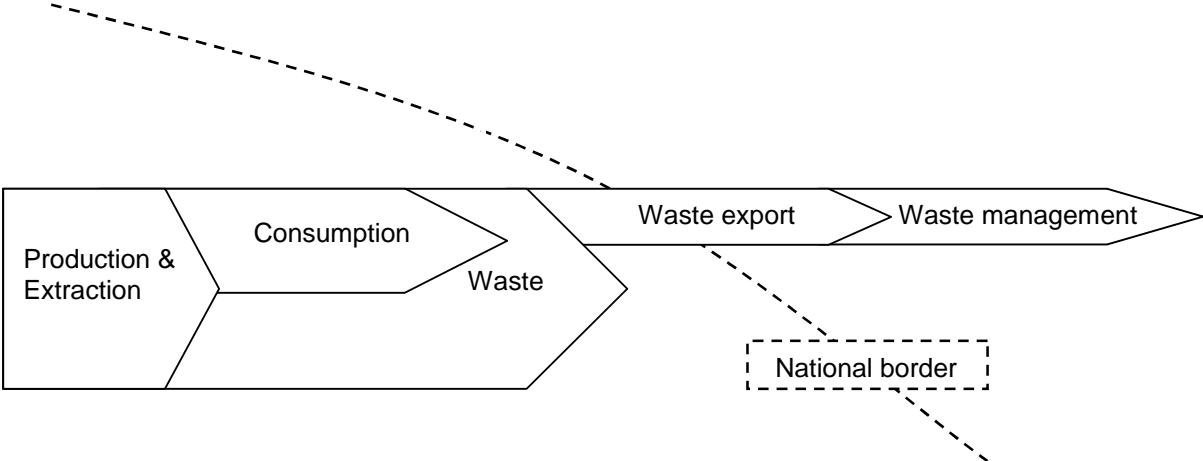
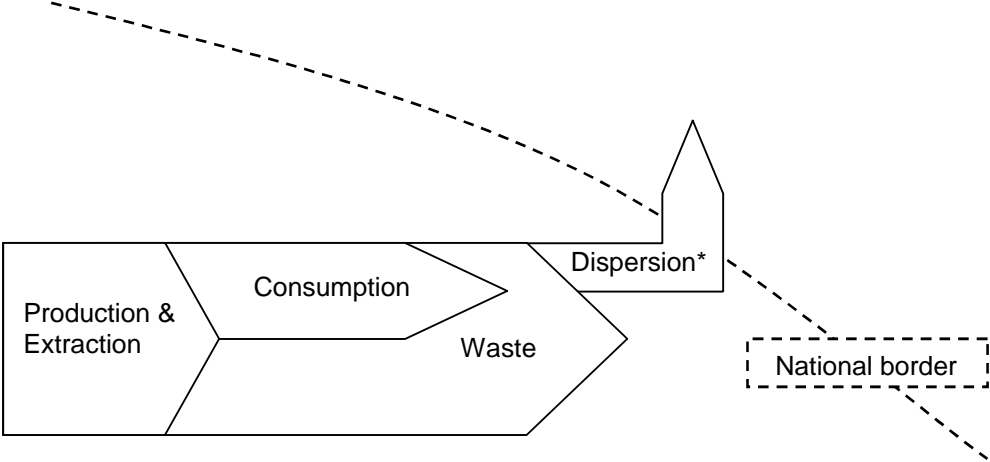


Figure 4.5 - Conceptual map of transboundary dispersion



*As a consequence of emissions

In the following segments, I will differentiate between processes on the basis of a few simple lessons learned from waste management. In the next chapter I will investigate which of the economic processes shown in the maps that have received attention from the international community.

4.3. Differentiating waste

Not all wastes are the same. A ton of compost will do quite a bit less environmental damage than a ton of mercury. Hence, it might be helpful to explore what human economies actually release into the biosphere, and what characterises these types of wastes. The absolutely dominant waste type produced by industrialised economies is carbon dioxide emissions from combustion of fossil fuels. It accounts, on average, for more than eighty percent by weight of material outflows (World Resource Institute,

2000, pXII). Other important outputs of industrialised economies are fertilizers and manure, and excavated soil from mining and construction (ibid., for example p80).

The WRI in their reports differentiate between waste flows by the medium which the waste is released into, land, water or atmosphere. If waste is released into one of the two later it will disperse more easily across national borders, and will likely be of more interest to the international community (ibid., p10). One of the main results of the reports was that the atmosphere had become “by far the biggest dumping ground” of the industrialised economies (ibid., pXII). This of course corresponds with the predominance of carbon dioxide waste flows.

Another important differentiation in waste politics has been the classification “hazardous”. Although the definitions of hazardous vary the classification is usually used of substances that even in small amounts pose a health or environmental threat. This might include substances which are explosive, flammable, poisonous, infectious, corrosive, toxic or exotoxic. For example; arsenic, mercury, lead, asbestos, acidic solutions and ethers (Krueger, 1999, p8f). Simply stated, these substances are of special concern.

Besides these hazardous substances there are other substances which in more complex ways disturb natural processes. For example, chlorofluorocarbons (CFCs) which chemically reacts with stratospheric ozone and depletes the atmospheric ozone layer. Emission and creation of these types of wastes will naturally be of more interest to any regulatory political body. Greenhouse gases poses no direct threat to humans or ecosystems, but by disrupting climatic processes they have been generally hailed as being of special concern. To differentiate these important wastes, substances of this type will be termed disruptive in this thesis (following the World Resource Institute, 2000, p16).

Most substances and wastes however, are not classified as hazardous or considered disruptive. This does not mean that they do not pose a threat to the environment. Municipal waste is for example responsible for poor environmental conditions around urban areas (UNEP, 2002, p244) and fertilizer run-off is a major driver behind eutrophication of coastal areas (ibid., p181). Many have also argued that it is the sheer amounts of the waste created by the world economy which is the main problem (Daly, 1987, p324). None the less, these substances will be termed non-hazardous in this thesis.

4.4. Differentiating countries

The WRI model was based on studies of industrialised countries alone. There is consequently a need to further discuss the situation of developing economies. The basic structure of the model is probably valid for developing economies as well, it is after all an abstract conceptual model. But the composition of waste types, the relative importance of transboundary flows, the technologies which produces the waste as well as the amounts of waste will likely vary from their industrialised counterparts. These differences are partly consequences of the relative importance of agriculture to industry (World Resource Institute, 2000, p38).

However, the difference of the most importance to this thesis is that many developing countries lack the technical capacity to successfully manage waste in a sustainable fashion. Especially when confronted with industrial type waste, the knowledge, institutions and finances available in these states are inadequate (Krueger, 1999, p84).

All of the above factors lead me to believe that any characterisation of waste creating processes must be sensitive to the type of countries involved. A process which entails large flows of hazardous waste from a developed to a developing nation is fundamentally different from a process in which the flows run in the other direction. This insight is reflected in almost every piece of international environmental legislation, for example through the idea of differentiated responsibilities or through the country categories of the Basel Convention. In this thesis, processes will hence be differentiated by the origin and destination of their transboundary flows. In the next chapter, which investigates those issues given attention I shall investigate whether that attention was conditional on the type of wastes or countries involved.

5. Processes given attention

In this chapter I present all those issues (processes) which fulfil the criteria for “given attention” which I developed in chapter two. That is, the processes which have been discussed in the context of waste regulation in primarily Elliot’s “The global politics of the environment”. I have, following my sources, identified six major areas of international environmental legislation which relates to different forms of pollution, these are presented below. For each case of legislation I identify the type of transboundary flow, wastes and countries involved and most importantly the types of economic processes that were regulated or discussed.

5.1. The Basel and Rotterdam Conventions

The Basel and Rotterdam Conventions regulate transboundary movements of, and to a certain extent the production of, hazardous wastes (Basel) and certain toxic substances (Rotterdam). The Basel Convention was adopted in 1989 by 116 countries, notably not the US and the EU (Elliot, 2004, p62), the Rotterdam Convention in 1998 (although it has yet to be ratified by enough parties to bring it into effect) (ibid., p64f) . The central component of both agreements is the prior informed consent principle, all transboundary shipments of the substances covered by the conventions must be preceded by written consent by the importing country (ibid. p62, p65). Export of waste is only to be a last resort, if a country is unable to safely dispose of the substances but another country can. The Basel Convention also feature a non-ratified ban on all shipments of hazardous waste from OECD to non-OECD countries.

A prominent feature of both agreements is the tensions between developed and developing countries. Rozencranz and Eldridge even described the objectives of developed countries along with certain multinational industries as “seek[ing] to legitimise the continued generation and disposal of hazardous waste”, as compared to the objectives of developing countries along with environmental groups who seek to “reduce and ultimately eliminate the production and dumping of such waste” (1992, p. 318f, concerning the Basel Convention). A second important feature of the conventions is the unwillingness to challenge the principles of the General Agreement on Trade and Tariffs (GATT) and the World Trade Organisation (WTO) concerning the free movement of goods. This unwillingness is in large part responsible for the controversial fact that wastes destined for recycling operations are not presently covered by the Basel convention (Elliot, 2004, p62).

To sum up, the conventions constitute two instances of attention to exports of hazardous wastes primarily from developed to developing countries.

5.2. The Stockholm Convention

This Convention, signed in 2001 but as of yet not ratified, deals with so called Persistent Organic Pollutants (POP:s). These substances are a certain kind of

hazardous synthetic chemicals which accumulate in living tissue and up the food chain to cause a series of serious human illnesses along with ecological disruption. They are especially problematic since they disperse quickly (across borders) through air and water affecting developed and countries alike. Most POP:s are pesticides, of which the most widely known might be DDT, which means that they are purposely dispersed into the environment upon use (Elliot, 2004, p65f).

Tensions between developed and developing countries was a prominent theme in the negotiations of this agreement also, but they took a slightly different form. Developed countries had as a rule already banned POP:s on a national level. Developing countries lacked such regulation and POP:s were in wide use to produce short-term economic benefits. Some developed countries were also concerned with a lack of alternatives for fighting malaria and similar diseases (ibid., p66).

The end result was a Convention that regulates the production and trade of the covered substances. Governments were also tasked with preventing the development of new POP:s and to promote strategies for replacing old ones.

5.3. Long-range transboundary air pollution

At least five international agreements deal with long-range transboundary air pollution (the Convention on Long-Range Transboundary Air Pollution, the Helsinki Protocol on the Reduction of Sulphur Emissions, the Oslo Protocol on Further Reductions and the Sofia Protocol). The substances of greatest concern have been sulphur dioxide and nitrogen oxide which, when released into the atmosphere, through chemical reactions result in acid rain. Another class of important pollutants is called volatile organic compounds, they pose a more direct threat to human health (ibid., p70).

The regulation of these substances were initially only a question of concern for the developed countries, since they due to their extensive use of the substances were the only ones affected, although both emissions and impacts are becoming increasingly problematic for some developed countries. The major tensions in the negotiations were between net-importer and net-exporter developed countries. The three largest emitters (Poland, the UK and the US) still have not committed to any of the agreements (ibid., p71f).

As a total legislative body the agreements have regulated emissions of these disruptive substances.

5.4. The Montreal Protocol and the Vienna Convention

The Vienna Convention was adopted in 1985 and basically set the scene for the 1987 Montreal Protocol which made legally binding the principles in the Convention. The two agreements reflect concern that the global stratospheric ozone layer, which performs the critical function of filtering harmful ultraviolet B radiation, is being depleted by chemical reactions with chlorine and bromine gases. Increased concentration of these gases in the atmosphere is a result of human airborne wastes.

Examples of substances that have this effect are chlorofluorocarbons (used in refrigerators amongst other things) and halons (used in fire extinguishers) (ibid., p73ff).

The developed countries were at the time responsible for almost ninety percent of all emissions, but consumption of ozone-depleting substances was on the rise in large parts of the developing world. Claiming that alternatives were too expensive and pointing out the obviously greater responsibility of developed countries, the developing countries negotiated a ten-year respite from regulation. This was one of many exceptions in the protocol which has been seen as both a major breakthrough and as a piece of legislation full of loopholes. The Protocol regulates emissions and consumption of the covered substances along a freeze-and-roll-back approach (ibid., p75).

5.5. Marine waste regulation

Marine pollution is a clear-cut case of transboundary dispersion and has three main sources, run-off from land based sources of pollution, ships including dumping and atmosphere-ocean exchanges. The last source has been regulated through agreements on airborne pollution. Of the first two, regulation of land based pollution has met the most resistance. Land based sources contribute to about seventy or eighty percent of total marine pollution and substances released in this fashion includes pesticides, fertilizers, sewage, oil and a range of heavy metals. Unfortunately regulation of these sources clash with the traditional principle of territorial sovereignty over coastal waters. Attention to this issue by the international community has so far resulted in a non-binding Programme for Action which only encourages the parties to share information. Marine pollution by ships has also proved difficult to tackle. Two international agreements cover the issue, the 1972 London Dumping Convention and MARPOL 73/78. The London Convention has been called a “dumpers’ club” because of its weak provisions and insufficient coverage, it has also yet to be ratified. The MARPOL, or International Convention for the Prevention of Pollution from Ships, has a wider coverage and puts higher technical requirements on ship equipment but has proven just as difficult to implement. Together the agreements on marine pollution constitute weak and erratic attention to transboundary dispersion (emission) of primarily the hazardous substances (Elliot, 2004, p67ff).

5.6. Substances inducive to climate change

The fourth Intergovernmental Panel on Climate Change (IPCC) report (or rather the first two parts of the complete report) finally fixed that present and future global warming is very likely due to anthropogenic increased concentrations of greenhouse gases (primarily carbon dioxide, methane and nitrous oxides). By changing the composition of the atmosphere humanity is also changing the climate, ocean levels,

temperatures and wind patterns (IPCC, 2007, p10). The efforts of the international community to somehow handle this situation have been given a lot of attention by the press, the scientific community and the public. It all began in the 1970:s when growing concerns prompted the first scientific conferences on the subject. That concern grew into demands for international political action in the mid-eighties. Although no concrete political action was taken until later on the IPCC was created in 1988 to provide additional scientific information. The 1992 United Framework Convention on Climate Change was the next major step, although lacking firm targets or commitments it pointed to the ways in which greenhouse gas concentrations should be handled, through limiting emissions and protecting the natural mitigators of climate change (Elliot, 2004, p79ff). The convention has been hailed as both an immensely important first step and as a meaningless document which does nothing to prevent climate change (ibid., p86). Similar statements have been made about the next phase in the negotiations, the Kyoto Protocol. That piece of legislation was finally ratified by enough parties to bring it into effect in 2002 although the U.S. backed out in 2001 (ibid., p89ff).

At every step of the way, the negotiations have been fraught with tensions between at least seven distinct groups, the U.S., the oil producing countries, the remaining OECD countries, the newly industrialised countries, the transition economies, the alliance of small island states and the rest of the developing countries (ibid., p84). As a result, the agreements reflect the lowest common denominator of the positions of the parties, i.e. low targets. Although both consumption and production of greenhouse gases have been recognised as large problems, the regulation of them has never been a real issue in the negotiations which focused almost entirely on emissions.

5.7. Summary

The international community has paid some attention to two of the three transboundary flows covered by this thesis, waste exports and transboundary dispersion. Export of goods have not been given attention except in the case of POP:s which were regulated primarily due to their “automatic” transboundary dispersion upon use as pesticides. When it comes to exports of waste it is mainly the act of export itself which has been given any significant attention, although there has been some waste management concerns and rhetoric aimed at production. Transboundary dispersion has received the most attention with focus mainly on emissions but to a limited degree also on production and consumption (mostly through technology transfer funds). The types of waste given attention have all been either hazardous or disruptive to for example the climate or ozone layer.

6. Ignored processes

As a mirror to these processes which have received attention from the international community, some processes have been ignored. These are illustrated in figure 6.2 below, although before looking at it consider figure 6.1 (first shown in chapter two, now with the addition of the striped area which contain processes given limited attention) which acts as a key.

Figure 6.1

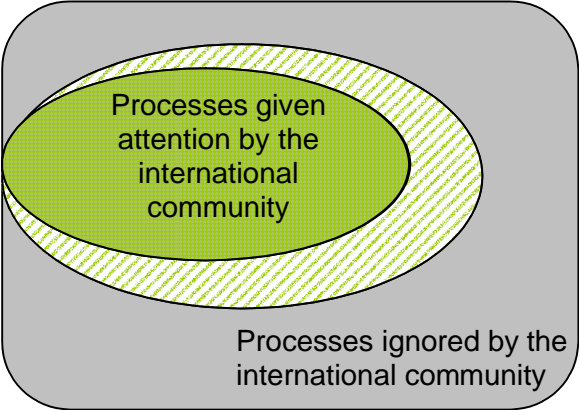
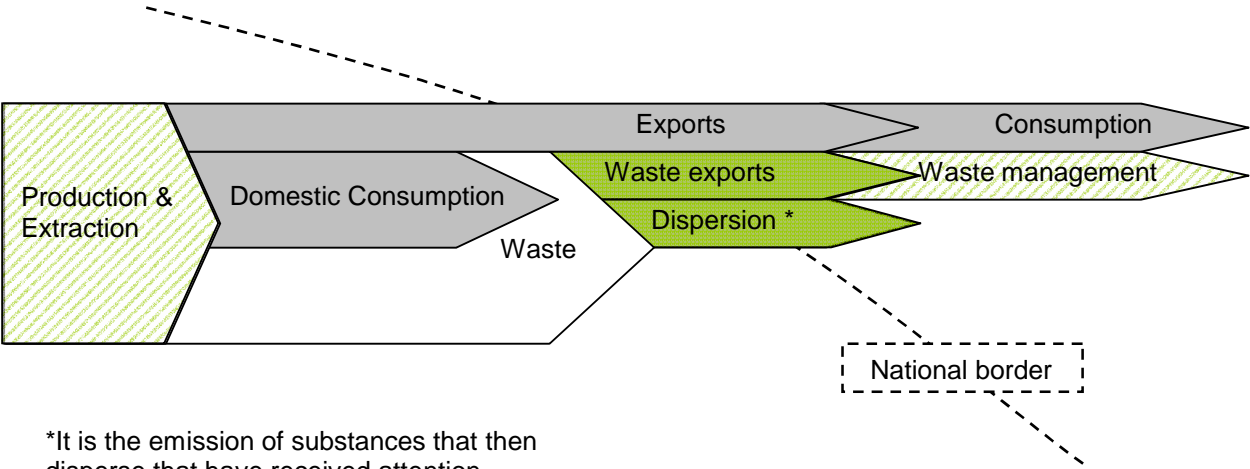


Figure 6.2



*It is the emission of substances that then disperse that have received attention

With risk of pressing an already made point, these are the processes which have been ignored: all processes which does not involve hazardous or disruptive wastes; export of goods unless there is some other transboundary flow involved; consumption, except in the case of substances harmful to the ozone layer; production and waste management, sometimes discussed as a problem but seldom taken action on directly. In the three segments below I will address some of these ignored processes in greater detail.

6.1 “Non-hazardous” waste

Non-hazardous wastes constitutes the bulk of the solid outputs of human economies. The category contains everything between fertilizers and municipal wastes, including plastics and most building materials. When managed improperly, for example by dumping in an open landfill, these wastes can also develop hazardous characteristics (Gandy, 1994, p7). Non-hazardous waste is currently the cause of many environmental problems such as waterway pollution, coastal eutrophication and poor urban environments (UNEP, 2002, p181, p152, p243). That the international community have chosen not to handle this potentially huge issue can consequently be seen as problematic.

In developed countries, sound management of these types of wastes is mostly available. Although there are growing difficulties in dealing with the enormous and growing amounts of waste and with siting facilities, partly because of rising environmental standards, partly because of negative public opinion and partly because of an absolute scarcity of suitable land for facilities (Princen et al., 2002, p158). As a result of these difficulties there is a growing trend of waste distancing, i.e. moving of waste to places with lower standards and less negative public opinion (ibid., p160). Stringent international regulation (supported by adequate resources) would establish universal high environmental standards, probably resulting in converging prices for management of non-hazardous waste a well. That convergence would create new economic global limits (which more accurately match ecological limits) to material throughput, hopefully forcing a change in economic behaviour. As with all social changes there would be both losers and winners to such a policy, explaining why it has been left unattended by the international community.

6.2. National waste, international products

Export of goods have not received attention from the international community in their regulation of transboundary waste problems. As long as no waste crosses an international border the economic activities that created the waste have remained under the radar of the international community, even though the created goods might have crossed many borders. This is problematic since exports constitute very large transboundary flows and an important part of the waste-relationships between countries. Let me present a picture of how this situation might be unsustainable.

Consider a hypothetical situation with no transboundary flows of waste (i.e. no dispersion or waste exports whatsoever) but in which goods and capital are allowed to move freely. This roughly corresponds to the ideal of the current neo-liberal order. Add to this situation three important characteristics of the present world; (i) large economical inequalities, (ii) the tendency of people to want as much goods as possible and (iii) the tendency of people and governments to want to distance themselves from the created waste. Since transboundary flows of waste are forbidden, whatever you are stuck with after production or consumption you will have to deal with within the country. But there are still possibilities to change the waste

allocation through the (overseas) siting of industries. Countries might in this situation strive to move their dirtiest industries abroad and increase their share of the least polluting service sector. A country's success is dependant on it's starting situation, which in this case is highly advantageous to the developed countries. If a country succeeds it will have successfully cleaned up domestic production but still enjoy "dirty" consumption patterns, with no incentives to decrease material throughput. For the not so lucky countries, they will be stuck with waste creating industries, a deteriorating environment and even smaller opportunities to catch up economically than before. Summing up, even if there are no possibilities to move waste, waste can still be allocated through power over industry siting in this scenario.

This is not a desirable situation. And it would seem quite far fetched but for the fact that there is evidence that we already heading in that direction. Richard Rosecranze has famously suggested that we are now seeing the rise of "virtual states" (notably the U.S. and Japan) which have detached themselves from dirty material processes and instead make their living on controlling such processes in other countries (Rosecranze, 1999, p43). A change in policies towards trade (which are now exclusively dominated by overly positive liberal ideas) in the context of waste could possibly alter this unwanted scenario.

6.3. Consumption

The importance of unsustainable consumption patterns to the throughput of materials and the world's waste problem can hardly be overestimated (Princen et al., 2002, p3). That the international community has taken such a lax position towards consumption, almost never including it in it's regulatory strategies, is therefore regrettable. It is however, not unexpected. As Princen et al. point out "*To confront [the question of consumption] is to bite off, in one chunk, a large and vexing body of social, political, and cultural thought and controversy*" (2002, p1). This is not something which the powers that be are prone to doing all to often.

That consumption has been ignored on a national level is a problem in it's own right, for example because it decreases chances to curb material throughput. But looking at the consequences of international ignorance reveals yet another dimension. Only a small portion of the global population are large-scale consumers, production to make possible that consumption on the other hand is preformed everywhere in the world (especially if one includes extraction of natural resources). Separating consumption from waste on a global scale therefore has large ethical implications. It absolves the historical beneficiaries of waste creation from guilt and shifts responsibility to a larger segment of society which may never have experienced the goods but only the "bads" that flow from production. From the perspective of trying to implement sound waste management in developing countries, the external negative pressure from unlimited demands for consumption goods is a complicating factor.

7. Discussion

To what degree are the above results dependent on the design of the study? And how can the design be complemented by future studies? These are the questions which guide me in the final act of putting the thesis in a larger scientific context.

First of all, the research question and the entire focus on excluded issues is based on a specific theory of power. Another theoretical perspective would possibly dismiss the thesis as a whole, especially the notion that some sort of suppressed objective interests can be identified without direct observation of conflict. I do however believe that if one accepts the concept of objective interests in itself, my identification of those interests seems quite reasonable, resting as it does on the often repeated insight that the poor need a more sensible form of economic growth.

Industrial ecology has also left its impression on the thesis and obviously colored the results. A neo-classical perspective on the economy would for example not have linked the different processes in the economy to each other and to waste in the way in which I have here. This is not a problem, the political economy must be observed from new perspectives which reflect a greater understanding of the relationship between man and nature. The combination of a neo-gramscian perspective and industrial ecology have I believe proved to be fruitful in providing a new stable angle for critique of the neo-liberal order.

The method built on the concept of a contrafactual model is not the only way in which the results might be arrived at. Another method might have been to focus on the actual process of excluding issues from the agenda. Some acts of exclusion could be identified with inside information. Others could be identified by looking at the institutions and norms in place, which actors that are connected to them, who profits from them and who is active or passive in establishing them. That will have to be a task for future studies.

A bachelor thesis is always limited in a number of ways. There are definitely areas in which I would have liked to immerse myself further. The thesis could be complemented by including nuclear waste, looking at the importance of economic sectors and observable economic interests. A very interesting complement would be a closer look at the objective interests of the poor in the waste issue using a method suggested by Steven Lukes. By looking at the cases where power relations are not active one can observe what behaviour would be like in absence of power and extrapolate the interests (Lukes, 2004, p50f).

The result of the study, that the international community has ignored certain processes who play a part in waste creation, is quite robust. What one makes of that ignorance - is it important? is it fair? is it consistent with sustainable development? - depends on one's normative standpoint. In the conclusion below I will present why I believe it to be important, unfair and possibly detriment to sustainability.

8. Conclusion

What will be the outcome of the international community's choice not to target consumption, exports and non-hazardous waste for regulation? I would argue that this incomplete coverage foils what should be the two main goals of international waste regulation; decreasing the total amount of waste and protecting the developing countries from the environmental impacts of the developed countries' consumption patterns. A major challenge to those goals today is economic inequality which provides opportunities for the global rich to distance themselves from their wastes on a global scale (Princen et al., 2002, p160). The current international regulation even if universally implemented does not face up to this challenge. By allowing free movement of goods irrespective of environmental standards it opens up for siting of dirty industries in developing countries. The developed countries are then insulated from those production and agricultural wastes by the regulation of transboundary flows of hazardous waste. The waste created by consumption (mostly non-hazardous) is however not bound by regulation and may be exported back to the developing countries. In the worst case scenario incomplete regulation merely leads to a neocolonial situation where countries are separated by their role in the global economic metabolism, either receiving only benefits or only environmental impacts.

This need not be the case however. International regulation is always a work in progress and may develop into something of more substance. National regulation in developing countries may possibly be strengthened to withstand external pressures to pollute. Or the economic mindframe which propels the irrational act of overconsumption may lose its central position, giving place to a more modest philosophy. I do believe it to be unlikely that any of these changes will occur however, if we do not recognise the power involved in suppressing these challenges to the current world order.

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