Sveriges lantbruksuniversitet
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Faculty of Natural Resources and Agricultural Sciences

Plasticization of the Ocean

Frame Analysis of the Marine Litter Discourse in German Newspapers

Solveig Schröder

Department of Urban and Rural Development
Master's Thesis • 30 HEC
Environmental Communication and Management - Master's Programme
Uppsala 2015

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Solveig Schröder

Supervisor: Lotten Westberg, SLU Uppsala,
Department of Urban and Rural Development

Examiner: Cristián Alarcón Ferrari, SLU Uppsala,
Department of Urban and Rural Development

Credits: 30 HEC
Level: Second cycle (A2E)
Course title: Independent Project in Environmental Sciences **-** Master's thesis
Course code: EX0431
Programme/Education: Environmental Communication and Management – Master's Programme
Place of publication: Uppsala
Year of publication: 2015
Online publication: http://stud.epsilon.slu.se

Keywords: Marine litter, Plastic, Ocean, Frame analysis, Human-Nature relations, Citizen, Responsibility, Germany

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Abstract

Marine litter is a recently emerging environmental problem. It originates from the careless and inaccurate handling of production, consumption and treatment of (plastic) products which ultimately become litter and threaten both the marine ecosystem and humans depending on a healthy ocean. This research is based on the assumption that marine litter lies at the crossroad between humans' relation to litter and their relation to nature. A frame analysis of the marine litter discourse in major German newspapers was conducted which is based on the premise of social constructivism and symbolic interactionism: that meaning is constructed through interaction (also with text) in which language plays an important role. The aim was to identify how the marine litter problem, the responsibilities and the individual's role are constructed within the frames. This should provide a glimpse of the marine litter discourse in German newspapers from which individuals construct meaning and understanding of the marine litter problem.

The frame analysis of 37 articles from five major German newspapers has revealed that the problem is framed with a focus on litter, without necessarily setting it in the context of the complex social and natural systems in which this problem is embedded. Nature-litter relations are on the forefront of the frames, such as describing a *plasticized ocean* which has become a threat. The marine natural system, humans and also society play a secondary role within the frames and are mainly seen in connection to litter, but not to each other. While the individual is largely framed as a consumer, it is argued that this enhances the agency of the individual, but also places much of the responsibility on him/her. Furthermore, the frames suggest that humans are neither part of society nor the natural system which complicates the issue of human-nature relations and responsibilities that are at the core of the marine litter problem, as it is argued in this research. This has lead to the assumption that it is a common responsibility for the natural environment, as well as the social system, which would be crucial to establish in order to overcome the problem of marine litter. However, this is not fostered within the frames found in this analysis.

***Keywords**:* Marine litter, Plastic, Ocean, Frame analysis, Human-Nature relations, Citizen, Responsibility, Germany

List of Abbreviations

MLP	Marine Litter Problem
SC	Social Constructivism
SI	Symbolic Interactionism
UNEP	United Nations Environment Programme

Foreword

The first time I was confronted with marine litter that went beyond mere aesthetic pollution during my beach holidays was in the *Plastic Garbage Project* exhibition that was held in a museum in Hamburg in 2012 (see www.plasticgarbageproject.org). Around the same time I also spent some time in a remote village on the Ecuadorian coast. Within this paradisiacal setting, litter came sweeping onto the beach regularly. Most of it was coming from the village and the local fishermen. Despite the inhabitants' annoyance with the dirty beach and several beach clean ups, they did not seem to (be willing to) grasp the connection to their own littering behavior. I started wondering how we, in Germany with apparently high environmental consciousness and environmental education, are handling litter and understanding the marine litter problem. With myself only beginning to understand the scope of the problem and its massive influence on the future of our oceans and ourselves, I decided to take up this topic for my master thesis.

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1. Introduction

"*Marine debris - trash in our oceans - is a symptom of our throw-away society and our approach to how we use our natural resources*."
UNEP Executive Director Achim Steiner at the Conference on Marine Debris (UNEP, 2011)

Marine litter (or *debris* – I will use the term *litter* in the following) is a major pressing environmental threat and scientists (and the public) are only recently beginning to understand the extent of human contribution to the problem. It consists of different kinds of anthropogenic materials – mostly plastics – that have been (un)intentionally introduced into the ocean. The concept of marine litter is relatively easy to grasp and connect to as it consists of tangible items – often of everyday use (Veiga, 2013). Nevertheless, it is also a very complex problem which is embedded in our modern consumption patterns and how we make use of our resources; i.e. how careful we are with waste and recycling (UNEP, 2008; Veiga, 2013). This viewpoint is supported by the United Nations Environment Programme (2008, p. 4) describing the "public's poor understanding of the potential consequences of their actions" as one of the causes of marine litter. This urgency of communicating the problem is taken as a starting point for this thesis.

Resting this research upon the epistemological view of symbolic interactionism and social constructivism I assume that public discourse on marine litter is likely to have a quite significant influence on how people perceive, understand and assess the marine litter problem (hereafter abbreviated as MLP). Because humans or human activities are the primary source of marine litter – as producers and consumers of these products and substances – it is therefore important to look at how the role of the people is portrayed in relation to marine litter within this discourse.

Moreover, I take a strong interest in human-nature relations which are tied in with the current way we live, use resources and treat the natural as well as social environment. Thus, human activities are intrinsically linked with the MLP. If we assume that the oceans are shared globally, is it not natural to assume shared responsibility as well? From the premise that human-nature relations are crucial within the MLP, it is important to explore how responsibilities for the natural as well as social environment are constructed within the newspaper articles. This is supported by the assumptions that an individual's relation to their context (e.g. nature) is important for enabling responsibility (Bina and Vaz, 2011); and that humans and nature are often seen as separate entities (Auhagen and Bierhoff, 2000).

Starting from my initial interest about the public's perception of the MLP and their own role in the issue, I have come to study the source from which much public discourse is influenced: the newspapers. Mass media, such as newspapers, play an important role for creating public awareness about a topic and, thus, can open up and foster public debates (Keller, 2000).

Investigating the current discourse about marine litter by looking at how the issue is framed in influential newspapers allows us to better understand the roles and responsibilities constructed within the public discourse. In this study frames are understood as *how information is presented and constructed*, which constitute a discourse. The frame analysis conducted in this research aims at understanding *how the problem of marine litter is framed*; and, furthermore, *how responsibility and the citizen's role are framed*. I will use the findings to discuss *what implications the frames might have for the individual's assumption of responsibility for the marine litter problem.*

By focusing on the German discourse arena I have chosen a country in which environmental debates are largely present in society (e.g. Keller, 2000; Neverla and Schäfer, 2012). This suggests that the marine litter discourse establishes on more fertile ground compared to other countries with less environmental awareness. In this light,

investigating an emerging discourse should also shed light on how the public is established as part of the problem and/or solution; but also how this discourse is embedded in or related to other environmental discourses.

With this study I hope to contribute to the overall picture of how environmental problems are framed. As previously mentioned this is important knowledge insofar as the reader of these frames will use it to construct meaning from it, which will ultimately influence their own contribution to the marine litter discourse and their behavior. While other environmental problems have been analyzed thoroughly in terms of their social construction, marine litter has not yet been discussed from this viewpoint (as far as this literature search was concerned).

1.1 Problem Formulation

Marine litter is an increasing and pressing environmental threat, induced by human everyday activities and consumption. It is significant to understand how the issue is framed and how the citizen's role and responsibility are constructed, as this discourse is likely to influence the citizen's perception and assessment of the problem. This is of interest for scholars and practitioners interested in environmental communication.

1.2 Aim and Research Questions

My **Research Aim** is to identify the current discourse about marine litter in the main press articles in Germany within the past year. Within this discourse I want to identify how the problem of marine litter is framed, how responsibilities are constructed and what role is given to the citizen in this problem.

In order to reach this aim I have developed the following **Research Question and Sub-questions**:

> *What implications might the frames have for the individual's assumption of responsibility for the marine litter problem?*
>
> 1. *How is the problem of marine litter framed in the selected press articles?*
> 2. *How do they frame responsibility, and especially, identify the citizen's role in the problem?*

The answers to these questions will serve as a basis for a discussion about how the (frames of the) marine litter discourse may influence the individual's perception of the problem as well as their role and responsibilities towards it.

2. Literature Review

This literature review serves the purpose of situating the research problem in a context while justifying its relevance and new contribution to the field.

Many studies that engage in an analysis of the discourse about marine-related matters are connected to policy or governance issues (see for example Gelcich et al., 2005; Ritchie, 2014). The literature search for this study has not brought forward any study explicitly related to discourse of marine pollution or litter. There are, however, studies on discourses on litter and environmental pollution, as well as on environmental conflicts in general, which will help position this study. Studies including analyses of social constructivism; social responsibility of citizens/consumers; as well as marine pollution in general further aim at embedding the study in a context.

2.1 Background of Marine Litter Studies

In order to satisfy the curiosity of the reader this section gives an account of the current scientific and political definitions and studies about the topic of marine litter. Furthermore, a large part of the press articles analyzed in this thesis is partly based on these scientific studies.

The issue of marine pollution is not new, nor is the dumping of waste into the ocean, which has been practiced for centuries (Shahidul Islam and Tanaka, 2004). Back then most of the garbage was biodegradable; now marine litter has become a different matter with tremendous life expectancies, e.g. it takes around 450 years for a plastic bottle to dissolve (Sheavly and Register, 2007). However, marine (plastic) litter and its severe impacts have been long ignored and are recognized as a problematic phenomenon rather recently (Stefatos et al., 1999, in Derraik, 2002). The majority of studies dealing with marine litter emerged from the beginning of the 2000s onwards.

The United Nations Environment Programme (short UNEP) (2008, p. ES1) defines marine litter within the *Honolulu Strategy* (a strategic framework to combat marine litter globally) as follows:

> "Marine debris, or marine litter, is defined to include any anthropogenic, manufactured, or processed solid material (regardless of size) discarded, disposed of, or abandoned that ends up in the marine environment".

The majority of litter is made up of plastic: 60-80% of the total marine litter (Derraik, 2002, p. 843). There are many polluting sources and factors involved in the issue of marine litter. Among the many polluting sources are the sea-based shipping and fishing industry. However, a great part of litter comes from land-based activities (Umweltbundesamt, 2010). Here, especially litter left on the coast (e.g. by tourists), open landfills (e.g. litter blown away by the wind) and sewage-related litter (e.g. water from storm drains takes street litter directly to the open sea) are important sources of litter pollution from land (Allsopp et al., n.d., p. 6). Thus, careless handling of (plastic) litter on land and at the coast – such as accidently loosing, or leaving behind – contributes to the problem (Derraik, 2002). Conveying knowledge about marine litter and human contribution is identified as an important factor in successfully combating marine litter (Sheavly and Register, 2007; UNEP, 2008).

During the *International Conference on Prevention and Management of Marine Litter* (2013) representatives from several organizations, governments and scientists discussed the current issues at stake concerning marine litter. They have concluded the following points (ibid, p. 1, emphasis added):

- "marine litter is a **growing global environmental issue**, as highlighted at the Rio + 20 UN Sustainable Development Conference
- growing evidence of the **harmful effects of marine litter on marine biodiversity and environment**
- increasing **threat from marine litter to human health and safety**, ecosystem services, and sustainable livelihoods
- **high associated costs** especially for sectors such as tourism and recreational activities, shipping and fishing
- different materials, mostly **plastics** which are highly persistent and **remain in the environment for centuries**, constitute marine litter
- of particular concern is the **problem of micro-plastics**, which are **ubiquitous** and, reach even the most **remote areas** and **release harmful chemical substances** which may contaminate the food chain"

The severe effects of (plastic) litter, especially micro-plastics, on the marine environment as well as human health are analyzed in multiple studies (Allsopp et al., n.d.; Cole et al., 2011; Derraik, 2002; Shahidul Islam and Tanaka, 2004; Van Cauwenberghe and Janssen, 2014; Wright et al., 2013). They give account of the presently visible dangers and impacts of marine litter, but also stress the uncertainty of its long-term negative impacts, especially for human health.

2.2 The Ocean, Environmental Problems and Litter in Discourses

Since the aim of this study is to investigate how the problem of marine litter is framed, i.e. socially constructed, I have approached the literature search from two angles: social construction of ocean-related matters and social construction of environmental problems (esp. pollution/litter). The most holistic view on ocean-space as a socially constructed phenomenon can be found in Steinbergs work *The social construction of the ocean* (2001). He draws on traditional perspectives on human-marine interactions and has distinguished three forms (Steinberg, 2001, pp. 11–38): *ocean as a resource provider*, *ocean as a transport-surface*, and *ocean as a battle field*. He roots his perspective in the assumption that – similar to terrestrial landscapes – ocean-space is shaped by human actions, but also influences human action; thus ocean-space is also "an arena wherein social conflicts occur and a space shaped by these conflicts" (ibid, p. 20).

Höhler (2014, p. 440) argues that this (Western) view of the ocean space as a large food and raw material resource with infinite capacities developed in the 1970's. It included seeing and using the ocean as an absorber for hazardous substances; but also as a central part of the ecological system and, therefore, as an organism. A new aspect of this view was also that the human was seen as a part of this ecological dependency cycle and the question of ownership of ocean (resources) was raised – developing towards the idea of *Global Commons* in which all humans share the ownership rights of the ocean (ibid, pp. 445-448). Thus, does shared ownership of the oceans equal shared responsibility? And what role does the human-nature relation play in this regard? This question will be further elaborated upon in chapter 6.3.

Contradicting to the similar view on land- and ocean-space described earlier, Steinberg also concludes that modern construction of ocean-space is distinctly different to its terrestrial counterpart: "The Sea largely has been constructed as a "non-territory", an untamable space that resists "filling" or "development" […]" (ibid, p.34, original emphasis). The significance of this 'marine othering' might be important for understanding the long-prevailing perceptions of ocean as 'empty' but also as a source of endless resources and the capacity to withstand society's potentially harmful treatment, e.g. through

pollution (Day, 2003). This becomes significant for the matter of marine litter – do we see and treat the oceans as an immense garbage dump?

Despite the broad approach to the social construction of ocean-space, Steinberg (2001) has not included an account of marine pollution or litter in his book. Apart from the scientific investigation about marine litter, this literature search has not brought forward any study related to the social construction of the topic. However, studies about other forms of pollution and litter, as well as waste management, help to situate the matter of litter. This is of value to the research as marine litter has been previously identified as – amongst others – a result of improper waste management.

One such examination of the waste management problem was made by Keller (2000) as a comparative study of waste in public discourses in France and Germany. He illustrates that waste management – as a necessary consequence of our 'throw-away society' – has been and still is a controversial topic debated in public (see also Hird et al., 2014).

What ends up as litter in the marine environment was once (most likely) a useful object to an individual (or society). The life span of the object as *useful* and its successive transformation into *litter* is also a matter of definition (Keller, 2000, p. 246). Litter is an inherently simple, yet complex and very pervasive social phenomenon which stands metaphorically for pollution of all forms in our environment, but also connects to risks and uncertainties (Hird et al., 2014, p. 442). Thus, according to Keller (2000) it constitutes the basis of all environmental discussions. Nevertheless, Hird et al. (2014) emphasize how surprisingly routinized and unspectacular waste (management) is for the most public. Thus, the issue of litter can only be openly discussed if the public connects meaning (e.g. un/known risks, health, consumerism, etc.) to it (ibid, p. 422).

These discussions are about defining and interpreting the conflicts and problems, thus the construction of the social reality of these problems (Keller, 2000, p. 249). The arena for these discussions are political, semi-public and (often later in the process) public. Especially the mass media play an important role in this matter. Keller (2000) criticizes that they merely feed on already existing typified interpretations and do not contribute new interpretations. Nevertheless, they are highly influential in the creation of public awareness and opinion as shown by Keller (2003) with the example of catastrophic events and catastrophe narratives within the media. Such media representations can also result in the opening of public debates about risks (ibid, p. 400).

Hajer (1995) has analyzed the discourse around the pollution through acid rain. He draws similar consequences as Keller (2000, 2003): that it is important to determine the social construction of environmental problems, because the environmental discourse is established on these. He further stresses the inherent social (conflict) component of environmental issues, which leads to two different angles to view these issues: ecological vs. socio-ecological problems (ibid, pp. 3, 18; see also Barr et. al, 2011). I find this distinction interesting and applicable for the analysis of marine litter data, as marine litter lies at the crossroad between human's relation to consumption and waste, with the relation between human and nature. Thus, one of the focus points of the analysis is on human-nature relations.

Since the existence of the problem is not denied by any actor (as far as this research goes); it is rather a question of how the problem (and its extent, causes, actors, consequences etc.) is interpreted and constructed.

2.3 Citizens and Responsibilities

Another focus point of my study is how the public – more specifically the individual citizen – is framed as part of the MLP. Furthermore, I set this in relation to responsibility, thus analyzing the way the articles are ascribing responsibility upon the citizen.

A common way to look at this is through the concept of *citizen-consumers* which is embedded in a neo-liberal paradigm and emphasizes individual agency (Barr et al., 2011).

It frames citizens as the agents of change in terms of environmental conflicts, especially focusing on their (consumer) behavior. In consequence, in a lot of communication aimed at attitude/behavior changes towards environmental problems, citizen-consumers are endowed with responsibility regarding the environmental issue at hand, e.g. climate change. Moreover, Barr et al. (2011) criticize the current citizen-consumer approach for lacking the societal and collective dimension of responsibility within these environmental problems.

The issue of responsibility is presented more detailed in the theory chapter 4.1.

3. Methodology

In order to research the construction – or framing – of the MLP I have chosen a frame analysis based on textual documents, more specifically newspaper articles. Textual frame analysis is part of a qualitative research methodology which aims at providing deeper understanding of meaning and processes (Flick, 2006, pp. 11–32). The aim of the analysis was to move beyond a mere description of the content; towards grasping the underlying assumptions and overarching ideas that are implicitly and explicitly contained in the frames.

Taking an iterative approach to the analysis, combining inductive and deductive procedures, enabled to take theoretical concepts as a starting point of the analysis, and test these against the text. However, it also enabled new concepts found in the text to enter the analysis process which could be tested against the material as well. Thus, the analysis is guided by theory as well as empirical findings.

3.1 Frame Analysis

I chose frame analysis over (other forms of) discourse analysis as the former is more concentrated on texts and "how an issue is defined and problematized" (Hope, 2010, pp. 1–2), as well as a detailed linguistic analysis, while the latter largely provides analytical approaches for discourses constituted through interaction. Keller (2011, pp. 47–48) criticizes common discourse analysis approaches (i.e. Laclau & Mouffe, Fairclough, Jäger, and Wodak) as not suitable to reveal the *social construction of reality* according to the ideas of Berger and Luckmann (cf. *The social construction of reality*, 1966), but rather to remain in quest of hegemonic and ideological critique of language use in communication.

Furthermore, Entman (1994, p. 52) gives a definition of framing which confirms the methodological choice of frame analysis for this study:

> "To frame is to *select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation* for the item described" (original emphasis)

In this study frames are understood according to Entman (1994) who states that "frames highlight some bits of information about an item that is the subject of communication" (p. 53), in other words, frames depict certain parts of a reality while other parts go unnoticed.

The frame analysis employed in this study is largely based upon the methodological approaches of Entman (1994), Hope (2010) and Raitio (2008), as well as an *analytical tool box for frame analysis* devised by Uggla and Olausson (2013). Moreover, the approach used here borrows some analytical tools from Keller's (2011) SKAD (Sociology of Knowledge Approach to Discourse) approach.

Frame Analysis is largely based on the works of Goffman (cf. *Frame Analysis*, 1974) in which he establishes frames as "discursive (i.e. linguistic and symbolic) structures used by actors to 'organize' and 'define' social situations" (Inglis and Thorpe, 2012, p. 124). This further implies that certain ideas are included into the definition of a situation while others are deliberately left out – both ideas, the present and absent ones, are defining the framing according to Entman (1994, pp. 51-52). This is especially interesting in case of the media articles (as empirical data for this study) as they are likely to be deliberately framed (Raitio, 2008, p. 50).

Goffman's frame concept is situated within the **Symbolic Interactionism** (henceforth SI) paradigm which, in turn, is informed by the works of Herbert Blumer and George H. Mead, amongst others (Inglis and Thorpe, 2012, pp. 119–125). The premise of SI is that meanings,

the self and society are created through social interaction between human beings. Moreover, a central question within SI is the concern of how social reality is constructed, with an emphasis on the individual's role in this process (Inglis and Thorpe, 2012, p. 107).

This connects to the second theoretical perspective which is important for frame analysis: **Social Constructivism** (henceforth SC), a term coined and developed by Berger and Luckman (cf. *The Social Construction of Reality*, 1966). SC claims that our conception of reality is socially constructed, thus there can be various interpretations of the same reality, e.g. an object, phenomenon, etc. (Burr, 1995). Furthermore, the knowledge (or conception) we construct and in which we adhere meaning to things, is based on the ideas of symbolic interactionism about interactional construction of identity (Burr, 1995, p. 6). Another central aspect of SC is the importance of language: "the way a person thinks, the very categories and concepts that provide a framework of meaning for them, are provided by the language they use" (ibid, p. 8). In turn, single words may activate existing frames or systems of frames in the human mind; which is why language is quite powerful in environmental messages and discourse (Lakoff, 2010).

Thus, the premises of frame analysis – as they are based on SC and SI – are that the knowledge or perception of reality is socially created through interaction (also with texts); language plays an important role in the creation of meaning; and the interaction between society, language and the individual, as well as the objects of interpretation.

With the frame analysis I expect to study how the phenomenon of marine litter is constructed (framed) within the major press articles. This allows me to draw a rough picture of the public discourse within the selected newspapers concerning this topic.

A graphical overview of the methodological approach can be found in *Appendix 1*.

3.2 Data Gathering and Analysis

For the generation of data, as well as its analysis, I assume the epistemological view of SC. Hence, the knowledge and data produced within the study are seen as socially constructed.

I chose to analyze newspaper articles because newspapers are an established form of providing the public with an important source of information and are influential for the public discourse (BDZV, 2014). In total, optimistic estimates suggest that newspapers reach out to 80% of the German population, including print and online newspapers (ZMG, 2013). Furthermore, the online newspaper version has gained readership and importance as an information source recently; around 44% of the Germans over the age of 14 make use of online pages of newspapers (BDZV, 2014, p. 15). For this reason, and for facilitation of data gathering, this analysis is based on articles from publicly available websites of the selected newspapers. With the exception of one newspaper (Frankfurter Allgemeine Zeitung), all articles can be accessed freely by any public user. This facilitates the spreading of information and, thus, contributes to the public discourse about marine litter, which is the subject of this thesis. For a deep and broad analysis of this public discourse, it would be necessary to include other media forms, like internet platforms, TV or radio; and more variety of newspapers and magazines as well. However, this was not possible within the restricted time and resources available for this thesis.

3.2.1 Purposive Sampling

For the analysis of the press articles I selected five of the largest German daily newspapers, for the reasons of wide national distribution and readership, as well as their resulting influence as opinion leaders (Ridder, 2009). The newspapers, furthermore, represent a broad political spectrum, covering conservative to left-wing political viewpoints. Additionally, one newspaper belonging to the popular press is included as it reaches the widest readership by far in Germany (Ridder, 2009). Statistics about the online readership

were not available for all newspapers; therefore, the selection is based on the printed versions.

Newspaper	**Abbreviation**	**Genre / political view**	**Printed newspaper/day (app.)**
BILD	*BILD*	Popular press	3.300.000
Welt	*WELT*	Conservative	264.000
Frankfurter Allgemeine Zeitung	*FAZ*	Conservative-liberal	368.000
Süddeutsche Zeitung	*SZ*	Leftwing-liberal	430.000
tageszeitung	*TAZ*	Alternative, critical of the system	56.000

Table 1: Selected newspaper, their genre and daily print figures; adapted from Ridder, 2009

The time frame set for the selection of articles was to include the most recent articles, from January 2014 until March 2015, since the majority of studies are rather recent and thus the knowledge about marine litter and its consequences is changing rapidly. The decision to select a shorter time frame enabled me to analyze more articles thoroughly which I deemed more important than a chronological analysis, in order to grasp a broader sight of the current discourse.

Searching for Articles

Within the online website of each newspaper the search function was used with the following keywords, whereby the * allows searching for different variations of the word:

meer* ODER ozean UND abfall ODER *müll* ODER plastik
(Eng.: *sea OR ocean AND waste OR litter OR littering OR plastic*)

This resulted in a high number of articles for each search, including several articles unrelated to marine litter. From these, all articles with a connection to marine litter were selected, in total 37, according to the following criteria.

Selection Criteria for Articles

In order to enable an even broader view on the discourse I decided to make two analyses. The first one is a condensed analysis focusing on titles and abstracts of all articles found in the search. This rests on the assumption that a majority of people mostly casts a cursory glance – scans the titles and abstracts – when reading the newspaper and does not always engage in reading the full article. Therefore, the information provided in the titles and abstracts might prove to be an important source of information feeding the discourse. Due to limited time and resources, not all of these articles could be analyzed fully. Hence, the second analysis is based on a smaller amount of article selected from the first analysis, based on further selection criteria.

Selection criteria for the newspaper articles (*First Analysis*):

- Title and/or abstract should contain a clear reference to marine litter, or contain the words *meer/ozean* and *plastik/müll/abfall/*
- Time frame: material or articles published between January 2014 and March 2015

This resulted in 37 articles of which their titles and abstracts was analyzed in the first analysis.

Selection criteria for the *Second Analysis*:

- Minimum number of 400 words per article
- Main topic should be problem of marine litter (or its solution); excluded for example recycling of marine litter into clothing since it does not deal with the problem/solution of marine litter directly
- Minimum two articles of each newspaper, possibly not in the same month, and different topics
- Larger range of topics, e.g. not three articles on how EU bans plastic bags

This resulted in 20 articles which were analyzed more thoroughly in the *Second Analysis*.

The samples are selected methodologically but also purposefully in regard to their relevance or interest value for the study, trying to find varying discourses. Therefore, the study cannot claim to produce generalized conclusions. However, it may be seen as an exemplary case.

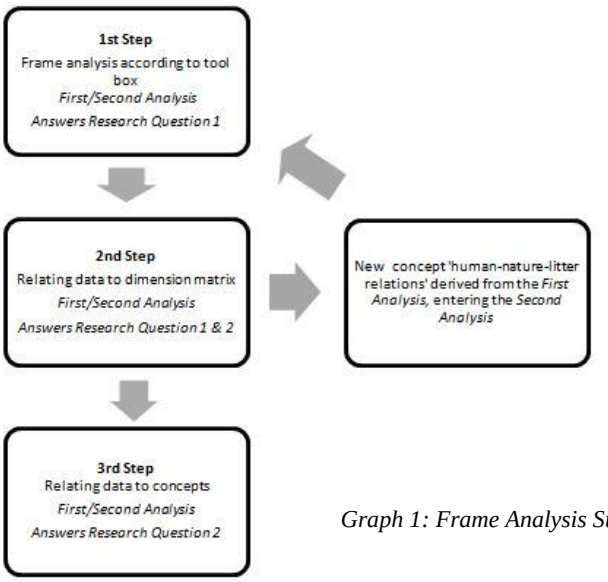
3.2.2 Data Analysis Procedure

The data (newspaper articles) is analyzed by means of the following frame analysis. To begin with, the *First Analysis* was carried out by analyzing the titles and abstracts according to Step One and Two (see below), with a focus on human-nature interactions. During this process 'litter' emerged as a new entity in this human-nature relationship, which was then added as a new category to the *First* and *Second Analysis*. For the *Second Analysis*, i.e. the 20 selected articles, Step One to Three were carried out accordingly.

The **first step** of the frame analysis mainly relies on a toolbox devised by Uggla & Olausson (2013) who took their inspiration from other frame analysists, amongst others Entman (1993) and Lakoff (2010). The main focus is on how information is made salient, by asking a set of questions while analyzing the text (Uggla and Olausson, 2013, p. 102). Please see *Appendix 2* for the 'analytical toolbox' questions. This step serves the purpose of a deeper engagement with the text and understanding of which information is presented and which aspects are highlighted.

In the **second step** the data resulting from the qualitative frame analysis is further processed according to an approach inspired by Hope (2010) and Raitio (2008, pp. 95–97) in which the passages most relevant to the research questions are selected and placed in a matrix. This involves doing a further textual micro-analysis of each passage in which the data is set in relation to different (extended) *dimensions* as identified by Keller (2011, p. 59), as well as to new sub-categories that emerge from the texts (Raitio, 2008, p. 96). An example of the dimension matrix can be found in *Appendix 3*. This step aims at answering the first research question about how the MLP is framed, as well as the second research question about responsibilities and the citizen's role in the MLP.

The **third step** – in the analysis and discussion – is then to relate the data from the *Second Analysis* (thus, the selected 20 articles) to theoretical concepts, like *structure and agency*, as well as, the *construction of responsibility*, and *human-nature relations* (see Chapter 4). This step further contributes to answering the second research question.



Graph 1: Frame Analysis Steps

3.3 Delimitations and Discussion of Method

Frame analysis is a very subjective undertaking, as it rests upon the researcher's own interpretation of the frames he/she identifies. Thus, subjectivity is one of the major critical points in frame analysis – as is the case with most qualitative social research (Flick, 2006; Hope, 2010). Similarly, empirical applicability of the analysis is limited, since the underlying premise of social constructivism points out that each person is likely to construct the meaning of the data differently. Thus, my role as a researcher is important to keep in mind, as I am starting off with specific research interests, personal assumptions and background knowledge, as well as, experience, which certainly influenced the way I selected, analyzed and interpreted the data. For those reasons, I tried to be as transparent as possible in my analysis and show my logical and interpretive steps in a way that the reader can follow. This should increase the reliability and validity of my data and analysis.

Furthermore, purposive sampling implies that the findings are not necessarily apt for generalizing statements. Nevertheless, the samples of texts should be seen as illustrative examples which can be found in German press articles. The purpose of this study is not to fully define the marine litter discourse, but to get an idea of the possible discourses. A full analysis of all available material (including other media sources) is not possible due to the limited scope of this study.

Having chosen a frame analysis enabled me to look beyond the mere content of the articles, grasping different levels of meaning found in the frames. However, as already pointed out, it rests on subjective interpretations, which can be seen as an advantage or disadvantage, depending on the epistemological view one takes. Criticism of the frame analysis approach is also based on the fact that it cannot provide any account for the source or development of the frames (Raitio, 2008, p. 47). Other forms of textual or content analyses may have revealed other aspects of the text with different focus points. However, with the assumption I take on here – that newspaper articles contribute to the readers' construction of meaning and understanding of marine litter – it is suitable to apply a frame analysis approach. Other possible methods, e.g. interviews with the authors of the articles, might have revealed even deeper understanding of the frames and underlying assumptions. Though, this was not possible due to research-economic and practical reasons.

4. Theoretical Concepts

The theoretical concepts presented here consist of two sets: The first set has guided the research and is an essential part of the discussion. It includes the concept of responsibility (see 4.1), as well as, the concept of human-nature relations (see 4.2). The second set of theoretical concepts, agency and structure (see 4.3), play a less important role in the research. However, they provide additional viewpoints which are deemed valuable in order to discuss the two latter concepts in relation to the empirical data.

4.1 Responsibility

There is no single definition of responsibility. Though, we can say responsibility evolves in social contexts and describes the relation between an individual and society (Auhagen and Bierhoff, 2000, pp. 1–3). The issue of responsibility is becoming more important in today's society, especially with regards to environmental behavior (Barr et al., 2011). The ascription of environmental responsibility upon citizens may result in acceptance or denial of that particular responsibility (Auhagen and Bierhoff, 2000, pp. 1–3). There are two realms from which responsibility can be ascribed upon the individual: internally and externally. An *internal ascription* means that the individual (at least partially) accepts the responsibility (Kaiser et al., 2000, p. 110) and freely chooses to follow the moral duty (Auhagen and Bierhoff, 2000). However, when responsibility is *ascribed externally* – from other actors – it restricts the individual in his/her choice and assumes control over the individual which often leads to denial of the personal responsibility (Kaiser et al., 2000, p. 110). Barr et al. (2011) illustrate this for the case of climate change. They argue that the climate change issue is disempowering due to its magnitude and global relevance, so that it also leads people to ascribe responsibility to external actors, because they are not willing and/or able to deal with such large issue themselves (ibid, pp. 1228-1229). Therefore, responsibility is strongly intertwined with the personal obligation one feels towards the issue (Kaiser et al., 2000, p. 121) but also towards society in general.

How does the responsibility for the natural environment develop? One answer, given by Kals, et al. (1999), is the influence of emotional affinity towards the natural environment which may trigger responsibility and ultimately pro-environmental behavior. This emotional aspect of the responsibility to nature can express itself through various forms, e.g. "guilt about own environmental sins and fear of health problems caused by pollution" (Kals et al., 1999, p. 180). Thus, along this argument, emotions play an important role in the creation and assumption of responsibility.

Another important point in this regard is the notion that responsibility is relational, meaning that the relation an individual holds with his/her context (be it social or natural) brings forth responsibility (Bina and Vaz, 2011, p. 171). Bina and Vaz (2011) argue that the disused characterization of humans in a neo-liberal system – often identified as *homo economicus* – essentially lacks or ignores this relation and therefore neglects his/her responsibility. When the individual is presented as a consumer and endowed with consumer responsibility, Beck calls this "biographical solutions to systemic problems" (in Bina and Vaz, 2011, p. 174). This implies a perpetuation of the current economic system and centering the problem primarily on the individual consumer's choices.

Thus, we find two different dimensions of responsibility here. One is describing the internal vs. external ascription of responsibility which has consequences for the perceived responsibility felt by the individual. Furthermore, we can distinguish between the responsibility towards nature and towards society. These distinctions will be elaborated upon in relation to the frames within the discussion section

4.2 Human-Nature Relations

On the background of human-nature relationships many authors discuss the question if humans see themselves as an intrinsic part of nature or if we have separated ourselves from nature, and created two separate entities. Schultz (2002) describes an ambiguous situation in which we are deeply embedded in the natural system and dependent on it; yet, on the other hand, we actively seek to escape from it and separate us from nature, e.g. through technology (pp. 61-62). As a result of the constant withdrawal from nature in industrialized societies, an idealized image of nature has developed (Schultz, 2002, p. 62). This brings forward the problem of the individual's own understanding of his/her place in nature and – connected to that – a sense of responsibility. Similarly, Stone (2012, pp. 55–60) asks if man-made products (and environmental crises) are natural because man is part of nature; or if the environmental crisis in which we find ourselves stems from the separation of man from nature. In her eyes, Hölderlin (cf. 1970-2003 in Stone 2012) proposes a standpoint suitable to deal with this dilemma, who suggests that "human beings, and human culture, are entirely part of nature, not separate from nature in any respect. Yet […] human beings, and the culture(s) that they produce, do enter into opposition to nature (which, translated into a present-day context, would include our routinely acting in heedless or damaging ways towards natural environments)" (ibid, p. 56). From this position, humans try to reunite with nature by recognizing their reliance on nature, while maintaining separate from it (ibid, p. 67). Furthermore, researchers suggest that there are different types of concerns involved in developing environmental concern: egoistic and biospheric concerns. These are influenced by the degree to which we see ourselves as part of nature (Schultz et al., 2004). This brings up the question of how do people seek to find their position in this struggle between alienation from nature (e.g. through increased plastic consumption) and the reconciliation with their dependence on nature (e.g. boomerang effect of marine litter on humans)?

As described in the previous chapter, responsibility grows out of the relation one holds with another entity, e.g. nature (Bina and Vaz, 2011). Considering that frames influence the way individuals perceive a topic; the manner in which human-nature relations are framed in relation to the MLP is therefore deemed important. During the analysis litter emerged as another entity which was added to the human-nature relations. Thus, also human-litter and nature-litter relations were identified in chapter 5.1.

4.3 Agency and Structure

Two concepts commonly referred to in social sciences are the concepts of agency and structure (cf. Giddens, 1979, pp. 49–95) which refer to more subjectivist or objectivist approaches. Most social theories focus on either of the two which was criticized by Anthony Giddens, amongst others, who sought to provide a concept in which "people create and are created by social order" (Inglis and Thorpe, 2012, p. 208). Therefore, people – who are addressees and reproducers of the marine litter discourse – are endowed with agency and the capacity to transform structures (such as waste management), and vice versa. I regard this symbiotic relation between agents (practices/action) and structures (social order) as important for the case of marine litter because it offers the opportunity to discuss the *responsibilities* appointed in the discourse under research.

5. Empirical Data and Analysis

In the *First Analysis*, I looked at the titles and abstracts of 37 articles published between January 2014 and March 2015 concerning marine litter; which enabled me to grasp a broader view on the discourse. From these, 20 articles were selected for a S*econd Analysis* in which the entire article content was utilized (see Chapter 3 for the selection criteria and analysis procedure). Findings from the first and second analysis mostly overlap. Differences or additional findings are marked to separate both analyses and enable the reader to distinguish between the more general frames found in these newspapers when scanning the titles and abstracts of the press articles; and the more detailed frames found in the selected articles, providing a deeper but less broad insight. Furthermore, as the focus is set on human-nature/human-litter/nature-litter relations, these are indicated for each frame as these relations are crucial for the subsequent discussion in chapter 6.

All following quotes used from the articles are typical examples (unless stated otherwise) to illustrate the data and increase the transparency of the analysis. They have been translated from the original German version to English. The sources are marked with abbreviations which refer to specific articles, e.g. SZ5, BILD2. The respective article title and source, as well as the empirical raw data can be found in *Appendix 4*. The frames identified in the analysis are highlighted in bold for reasons of clarification.

5.1 Marine Litter Problem

This chapter aims at answering the first research question: *How is the problem of marine litter framed in the selected press articles?*

5.1.1 The Marine Litter Problem

Within the titles and abstracts the main concern is the description of the MLP which is largely framed negatively, giving plastic (litter and everyday items) and the ocean itself a negative connotation. The most dominant frames used are connecting plastic and/or litter to *threat* and *danger* (e.g. SZ1, BILD1, WELT6). However, in the titles and abstracts, this is mostly done on a rather abstract level, thus not referring to specific items of litter (e.g. everyday items) but generally framing it as *litter* or *plastic*. Two exceptions are the *plastic bag* (SZ8/9, TAZ5); and *micro-plastics* found in cosmetics, tooth paste and fleece clothing which have direct connections to everyday items (SZ10, TAZ4, FAZ5). These receive more attention in the second analysis of the articles, which is dealt with subsequently in the frame '*seemingly harmless but hazardous everyday items'*.

While the problem is presented, the articles largely do not give an account of the specific consequences of plastic litter which may imply the authors' assumption that the readership is at least partially knowledgeable about the topic. Where a consequence is referred to, it is mostly positioned as danger for the *ocean* or *environment* (e.g. FAZ2/5, WELT4/5/6, SZ6), but very rarely to humans specifically (TAZ4/8, BILD2). Nevertheless, the second analysis has revealed the emphasis on negative stress on aquatic life through plastic litter.

Thus, one dominating frame is ***plastic litter as a threat to the natural environment***. This frame mainly displays a *nature-litter relationship*, meaning that the interaction between litter and the natural environment is the focus of this frame.

Connected to the above frame is the emphasis on the *quantity* and *ubiquity* of the plastic/litter and its problematic features. Through the use of numbers, words, symbols and metaphors the dimension of the problem is emphasized in a rather dramatic tone, for example: "litter carpet" (TAZ5), "ocean full of litter" (WELT5), "world is drowning in litter" (BILD1), "four trillion plastic fibers per square kilometer" (WELT7). Pictures, e.g. of beaches fully covered in litter, add a visual note to the described magnitude of the problem. Thus, the MLP is presented in an even more dramatic way by emphasizing its

quantity and ubiquity. This culminates in two different but similar frames: *ocean as a garbage dump* and *plasticization of the ocean*.

The former frame, ***ocean as a garbage dump***, is used metaphorically to point at a societal or human dimension in the problem. Nevertheless, it remains a silent and unobtrusive finger-pointing for the most part because little reference is made directly to human or individual contribution to marine litter. Apart from the fact that marine litter assumedly derives from human actions, there is no direct accusation. One exception is the shipping industry which is accused of illegal garbage dumping into the ocean (SZ3, WELT2/3). Thus, the ocean is endowed with a new definition – as *society's garbage dump* – which complements the ocean's functions described by Steinberg (2001) presented in Chapter 2.2. Even though the reference to society and humans is at hand in this frame, I would argue that the main focus is on the *nature-litter relationship* in which the dimension of environmental pollution is emphasized.

The latter frame, ***plasticization of the ocean***, exaggerates the dimensional issue of the problem into an apocalyptic one in which the ocean itself becomes a threat: "dangerous plastic ocean" (SZ1). Furthermore, an "explosion of the plastosphere" (FAZ4) and "plasticization of the ocean" (TAZ1) pronounce a transformation of a natural state of the ocean into an artificial, *plasticized* one. The ocean itself is alienated from nature through the invasion and pervasion of plastic litter. This stands in contrast to the 'natural' functions the ocean is supposed to have for humans, e.g. as a resource provider. Here we find a *nature-litter relationship* similar to the previous frame.

Both of these frames deal with the aspects of alienation in which the plastic or litter has become part of the natural environment, causing estrangement through the use of contrasts that shed light on the strange new relationship between nature and litter: "as if someone sprinkled confetti into the water" (SZ6). Here too, we find images of *plasticized* beaches that play with the image of clean and natural beaches and ocean – a reference to the cultural association of paradise – which have been alienated through litter. This notion of human yearning for intact nature is disturbed by the images portrayed in the articles mainly through visuals. What does this mean for the relationship between humans and the ocean? How do we combine our idealized image of nature (clean beach and water) with the new *plasticized* reality?

A further extension of this *plasticized* reality, similar to the first frame presented above, is found in the second analysis of the articles. Everyday items and plastic in general are imbued with a new meaning: they have become "highly dangerous" (TAZ3). This is going beyond the transformation of useful items into litter, towards giving these items a new *hazardous* connotation. Similarly, plastic is presented as an ambiguous material that has evolved from being a "wonder material to a curse for the environment" (SZ6). Plastic items as part of everyday life are, thus, being given a new definition. However, the fact that "plastic is genius, long-lasting and comfortable" (BILD1) paired with their intrinsic connection to our lives and life style, paints a more complicated picture.

One item is especially put on the forefront: the plastic bag. It is portrayed as a symbol of overconsumption and the throw-away-society (e.g. TAZ3, FAZ2) which is supported with statistics of plastic bags consumed per year. Plastic everyday items – like a tooth brush – have not only become a threat to the environment, but have also evolved as actors in this problem. By becoming a threat to nature (and ultimately humans), they have gained a certain agency and might be considered as a symbol of the dependence relationship between humans and litter. This is contrasting to the power relation normally assumed between humans and litter where the human defines an item as litter and assumes control over its fate. Thus, ***seemingly harmless but hazardous everyday items*** emphasize a *human-litter relationship*.

Underlying all frames mentioned above is an ***apocalyptic tone*** which is connected to the risks and uncertainties emerging from the MLP. Especially the attention-craving titles and abstracts of the articles are found to bear a rather apocalyptic undertone. It is expressed in

various forms of language use, numbers and visual images as they are mentioned as examples above.

All in all, the articles make no or little direct reference to human contribution to the problem which results in a more or less matter-of-fact picture, meaning there is little reference to or analysis of the underlying processes and factors that have contributed to the problem at hand. While the frames are dealing with *nature-litter* or *human-litter* relationships, *human-nature* relations are rarely present. This will be further analyzed and discussed in the subsequent chapters.

5.1.2 Solutions to the Marine Litter Problem

Those articles focusing more on the solution of the problem exhibit a more positive tone overall. Here, two main solution frames can be distinguished: *preventing more litter from entering the ocean* and *taking care of the litter already present in the ocean*. The first one is dealing mainly with political and production-consumption-related issues, while the latter one builds on scientific and technological solutions.

In the prominent frame ***preventing more litter from entering the ocean*** emphasis is placed on the political reforms and regulatory forces that can restrict plastic bag consumption (e.g. SZ8) or impose fines for illegal dumping (e.g. WELT3). Furthermore, the focus is set on consumption and the consumer rather than production and industries: "maximum 40 plastic bags per consumer per year will be allowed in the future" (TAZ5). This develops two kinds of presumptions; first of all, it indirectly places blame on the consumer, and secondly, it emphasizes the power of politics – especially on EU level – for directing the course and providing a solution (e.g. SZ8/9, WELT2/3, TAZ5, FAZ3). The solutions suggested mainly imply cost-incentive structures, thus, connecting behavior change to economic incentives or financial punishment.

The actors of these solution scenarios are mainly (EU) politics as well as a generalized and impersonal statement of "it is important to avoid more plastic entering the ocean" (SZ6). This unspecific generalization in terms of *one should avoid litter* indirectly addresses individuals and appeal to their reflexive and critical mind (e.g. SZ10, BILD1, TAZ1, FAZ4). Yet, directly dealing with the matter of awareness increase (SZ8, TAZ3) or "giving litter a new value" (SZ6) is not very central in the frames.

The less prominent frame ***taking care of the litter already present in the ocean*** deals with the matter that has already ended up in the ocean (SZ4, BILD3). The actual amount of litter in the ocean and the actual amount remaining on the surface are uncertain and controversially debated in science. The proposed solutions are mainly of technological nature, e.g. the Ocean Clean Up Project (BILD3, SZ4). However, the great emphasis placed on the magnitude and complexity of the problem leaves the solutions appear weak and as mere attempts to "empty the bath tub with a thimble" (SZ4).

Since the scientific research on marine litter is rather recently developing, the newspaper articles are dealing with new issues brought up by scientific research. This also feeds a dominating frame in the articles that is emphasizing the ***uncertainty of the problem and need for more research***, thus, emphasizing also the importance of science for society and its wellbeing.

5.1.3 Summary

The analysis has brought forward the frames on the problem and solution of marine litter found in the selected press articles. Overall, the most dominant frame concerning the MLP positions plastic and litter as dangerous to the environment; with a strong emphasis on affecting nature rather than humans (*"plastic litter as a threat to the natural environment"*). By this way, the ocean itself and plastic everyday items receive a new, negative connotation, as they have become a threat (*"seemingly harmless but hazardous everyday*

items"). This is expressed by frames that emphasize the magnitude of the problem (*"ocean as a garbage dump"* and *"plasticization of the ocean"*). Underlying most frames is an apocalyptic undertone. The frames largely exhibit nature-litter relations, while only one deals with human-litter relations. What is generally lacking in the frames are references to individuals, responsibilities for the problem and human-nature relations.

Looking at the solutions, we find less prominent frames than the ones describing the problem. Here, the principal frame revolves around consumption, as well as, political power to regulate consumption (and thus litter production) patterns (*"preventing more litter from entering the ocean"*). The less prominent frame presents the (un)feasible technological measures to clean the ocean from the litter (*"care of the litter already present in the ocean"*). Both of these frames describe human-litter relations. Furthermore, the scientific uncertainty of the problem as well as solution is apparent in most of the above frames.

An overview of the frame analysis findings can be found in *Appendix 5*.

5.2 Responsibility within the Marine Litter Problem

This chapter aims at answering the second research question: *How do the articles frame responsibility, and especially, identify the citizen's role in the problem?*

The questions that were asked when investigating the responsibility issue are: *Who has responsibility? For what or whom?* The following data and analysis try to give an answer in relation to the marine litter discourse in the selected German newspapers.

We find two different fields of responsibility: the assignment of culpability (responsibility) for the problem; and the responsibility for taking care of the problem and/or solution. Furthermore, there are different levels of responsibility involved: macro (society) and micro (individual) levels.

5.2.1 Responsibility for the Problem

Largely, especially in the titles and abstracts, *responsibility for the problem* is not a topic at all. These articles present the problem without giving account of the origin or cause of it, and thus, do not assign responsibilities. Those that do ascribe some kind of responsibility to an actor mainly stay on the macro-societal level: "society's litter is becoming a great threat to the environment" (TAZ3). Generalizing the responsibility by referring to society in general or "humans that litter" (BILD1), might be interpreted as removing the individual's direct relation to the problem and partially alleviates his/her responsibility. However, it emphasizes the ***societal responsibility for civilization's litter***. A variation of this frame uses personal pronouns "we humans" (BILD1) or "our generation" (FAZ3) which reconnects the general societal level to the individual (reader). This might be taken as a reference to and indirect critique of the values of our "throw-away society" (SZ8). Though, no direct critique or accusation is uttered in most cases.

Inside the macro level problem-solution debate two related strands of argumentation emerge: one deals with "Germany's pioneering task in the world" (FAZ3) and the management of the problem, assuming responsibility; the other one openly assigns guilt to other countries, especially South-East Asia and China, for being main contributors to the problem (SZ8, TAZ8, FAZ3/4). This shows a more country-specific representation of responsibility than in the previous frame which was taking marine litter as a problem for society and produced by society in general. Similarly, the fishing and shipping industry are positioned as the main culprits for marine litter input in some frames.

In only one article responsibility for the problem is directly assigned to the individual claiming that "the average consumer knows or suspects [the ecological consequences of high plastic bag consumption]" (SZ8). Other than that, human contribution to the problem

is framed indirectly and more generalized (see above frame). Thus, the problem is generally not presented as a micro-level responsibility. How does this affect the perception of the problem and the individual's role in it?

5.2.2 Responsibility for the Solution

The responsibility for the *solution* plays a greater role than the *problem* responsibility in the articles. This holds true for both analyses, the first and second one. A range of solutions are presented: from *avoiding and recycling plastic* (TAZ1/2, FAZ4, SZ6, BILD1), over *political/regulatory forces* (SZ3/4/6, TAZ4, FAZ3), to *technological solutions* (SZ4/6, BILD3, TAZ4, FAZ3). These are in some cases connected rather clearly with responsible actors, in contrast to the problem responsibility frame. We can observe a shift away from the general societal focus towards a more varied representation of responsibility on macro and micro level.

Connected to the macro-level responsibility are solutions that are consumption or waste-handling-related. This includes directly addressing "industrial societies [to] avoid more plastic" (FAZ4) which might be interpreted as a weakened responsibility of the individual in favor of the societal responsibility.

It, furthermore, connects responsibility to politics. Here we find ***politics and politicians defined as powerful actors*** capable of and responsible for taking care of the problem. They are mostly presented as not directly responsible for the solution, e.g. avoiding waste, but as providers of the structure necessary to enforce the solution, e.g. through banning plastic bags. Thus, they are endowed with the responsibility to provide the structural frames that will introduce behavior changes within individuals and industries. Meanwhile, seeing politics as responsible for creating awareness and understanding for the problem is hardly an issue in the frames.

At the micro level, the responsibility for the solution is largely constructed as consumer choice of the individual (e.g. BILD1, TAZ1). This positions the individual as an active and reflexive being, endowed with certain power. However, the frames for the most part do not specify the individual's responsibility but leave the responsibility task uncertain. The next sub-chapter will deal with the question of the individual's responsibility more detailed.

5.2.3 Citizen's Role and Responsibility

As it emanates from the previous analysis, the individual only plays a marginal role in the contribution to the problem, as well as in the solution. It is through the generalized statements that the individual is addressed more often, than directly speaking of his/her role. Nevertheless, in these cases the individual is presented explicitly or implicitly, as a consumer.

Largely framing the ***individual as a consumer*** endows the individual with a certain power (to choose) but also displays its dependency on the goods consumed and the market. Having the ability and power to choose (products, behavior, etc.) grants the individual agency and certain responsibility towards the MLP. It also supposes certain reflexivity on part of the people. However, it restricts the being and the behavior within the framework of the economic-capitalistic system in which the consumer is a part of the process, just like the product he/she consumes. Translating the product into what becomes marine litter later, we can deduce a human-nature relationship that has separated man from nature, where man consumes nature (indirectly through harming it) rather than being part of that nature. However, the consequence of this is not a call for taking more responsibility for nature, but an emphasis on the responsibility for the product consumed (or, litter produced). It therefore seems that the *human-litter* relationship plays a greater role in the discourse at hand than the *human-nature* relationship.

As a result, asking *for whom or what* the individual has responsibility, we find products and litter. A concern or responsibility for nature more an underlying reason for the latter, but not explicitly mentioned. Similarly, the question for societal responsibility, meaning that the individual – as a citizen – has responsibility towards the (global) society he/she lives in and the generations to come, is hardly a topic.

From a structural point of view, the economic system as well as the political power set the framework in which the individual (consumer) acts. By emphasizing the responsibility and power of politics, the citizen as a recipient of these political regulations would be appointed with a weaker agency than previously discussed.

However, in spite of the above argumentation, the individual as culprit or solution of the problem is not on the forefront of the discourse within the analyzed articles. The majority only loosely connects the problem with the individual's responsibility so that it is up to the reader to feel addressed (and responsible) or not, and to reflect on the own behavior and take responsibility for it. Thus, the question of *who is responsible?* is probably not answered to a degree that would clearly position the individual's role in the eyes of the reader.

Interestingly, the ***word responsibility does not occur in any of the articles*** analyzed, except for one in which South-East Asian countries are directly blamed to be the largest marine polluters (TAZ8). Furthermore, the articles hardly find explicit and critical words for the human-nature-litter relationship; an exception: "the litter pollution of the oceans has become the symbol of the lack of ecological instinct of the affluent society" (FAZ4). I would, thus, argue that responsibility is largely constructed as underlying and implicit instead of directly finger-pointing.

Moreover, the responsibilities identified in this analysis are mostly behavior-related, but not necessarily value-related. An example would be suggesting *avoiding litter* (behavior) instead of appealing to the *concern about the environment*/*protection of the environment* (more value-related). This reflects the rather matter-of-fact tone that runs through most of the articles, meaning that it is not clear how we ended up with the problem and who can be held responsible. In contrast, we find a rather dramatic tone in the articles that suggests the problem's urgency and does not necessarily correlate with the fairly weak assignment of responsibility for the solution.

Giving the individual the role and responsibility of the *consumer*, suggests agency that can be played out in the framework of our current economic system. While emphasizing the political influence, puts forward the power residing in the social structure.

5.2.4 Summary

What is notably in the analysis is that the absence of direct ascription of responsibility leaves the question of guilt or blame mostly unanswered. One less dominant frame positions the responsibility for the problem as society's obligation to take care of the litter they themselves have produced (*"societal responsibility for civilization's litter"*). When looking at the responsibility for the solution, politics is seen as being capable and responsible of providing structures for improved consumption and waste management of other actors, e.g. consumers (*"politics and politicians defined as powerful actors to tackle the problem"*). Individuals only play a marginal role within the responsibility frames. If they do, they are prominently framed as consumers (*"individual as consumer"*). The emphasis is placed on the responsible consumption and litter production of the individual consumer.

All of these frames communicate a human-litter relationship. It is notable that no responsibility for the natural environment or the global society as a whole is explicitly portrayed, thus human-nature relations are not at the forefront of these frames.

An overview of the frame analysis findings can be found in *Appendix 5*.

6. Discussion

In this discussion I would like to pick up some questions that have emerged in the analysis, as well as, discuss the analyzed material. This process aims at grasping a more general picture of the frames, and underlying assumptions connected to these frames. Consequently, I wish to clarify and answer my overall research question: *What implications might the frames have for the individual's assumption of responsibility for the marine litter problem?*

As my initial interest in the topic was to grasp the individual's perception of the MLP and the understanding of the public's own role in this; I keep this as an underlying question, guiding this discussion. The articles selected from the largest German newspapers feed the discourse and knowledge about marine litter to which the individuals are subject to, and which they also reproduce and shape.

I proceed by identifying the most important findings from the analysis for the research questions. Even though nature-litter relations play the most important role within the frames and humans play a very subordinate role, I would like to focus the discussion on human-nature and human-litter relations as these connect to the question of responsibility. Furthermore, the fact that human-nature relationships hardly play an explicit role in the frames can in itself be seen as an important finding. Nevertheless, the implicit assumptions are crucial for this study and will be discussed below. Thus, *Human-Nature* and *Human-Litter Relations* will serve as a guideline and structure for this discussion, as I regard the MLP as essentially a crossing between people's relation to consumption and litter, and their relation to nature.

6.1 Human-Litter Relations

Human-litter relations may be defined in two ways: humans produce litter which contributes to the MLP (thus, are part of the problem) and humans have the choice to reduce litter (thus, are part of the solution). In both cases the individual is assigned responsibility, and with that, certain agency. However, the frames also suggest a new definition of the human relationship to litter; one in which litter itself gains agency and turns itself against its producer and user ("harmless everyday items becoming a threat").

The human-litter relations identified within the frames seem to fit well within the framework of neo-liberal economy prevailing in Germany as this framework is closely linked to people's consumption and waste production. Thus, what does marine litter symbolize within this framework? One possible answer, given by the frames, might be seeing marine litter as a symptom of our affluent throw-away society, which implies egoistic rather than biospheric concerns. Citing Steinberg (2001) again, he concludes that ocean space is an "arena wherein social conflicts occur and a space shaped by these conflicts" (p. 20). This can very much be applied to the MLP, seeing society's throw-away mentality and overconsumption essentially as a social conflict which severely influences the ocean and which becomes a plasticized threat. It also confirms Hajer's (1995) assertion that environmental issues also carry some form of social conflict. Structural issues contributing to the MLP, like waste management and treatment infrastructure, are less prominent in the frames; however, politicians are endowed with power to provide structures that enable or enforce certain consumer behavior. This gives the impression that the individual being carries much of the responsibility for the litter but is also subject to higher regulating forces and structures. The structures here are portrayed as ways to influence individual behavior, rather than the other way around. Furthermore, the structure (i.e. political and economic system) is depicted as dominant, providing a framework within which humans act. In the end, the frames leave the impression of a guilty individual who

should – within the given structures – change the own behavior. This implies that not the structure is responsible for the MLP, but the individual.

Consequently, I would argue that the marine litter frames found in the newspaper articles largely seek solutions within the existing structure – neoliberal economic and political system – without seeing the need for transforming it. The frames do not follow the lines of moral or value-laden argumentation but suggest consumption-related behavioral changes for the individual. This might be interpreted as taking the status quo of the societal system (i.e. structure) for granted.

6.2 Human-Nature Relations

What I expected to be a more prominent frame has turned out to be rather absent: the human-nature relations. A question that arises from the analysis is, if humans are seen as part of nature (i.e. the marine system) or if they are separated from it? This is further discussed in the following sub-chapter.

Nature is largely represented as the "marine environment" or "ocean", not expanding much beyond the marine system; for the most part neglecting the relations between all different kinds of (non-marine) natural and social systems. With a few exceptions of naming animals as victims of marine litter, the ocean environment remains a rather abstract concept which is not specified in terms of its complexity and interconnectedness. On one hand, nature – represented by the ocean – is not granted agency within the frames, by making it subject to human acting and efforts; which is in line with the thought of human domination over nature we largely find within the general mindset of industrial societies (Schultz, 2002; Dryzek, 2013). On the other hand, it has become an indeterminate threat through *plasticization*, which, in some way, provides the ocean with an active connotation.

Since human-nature relations are hardly mentioned within the frames, it is rather difficult to differentiate if the previous assumptions are also made in the articles. Nevertheless, positioning the plasticized ocean as a general threat still gives an indication that the natural system enters in opposition to humans, or vice versa. The alienation of nature by becoming *plasticized* gives the ocean a new meaning and function which might contribute to further removing humans from nature. Moreover, nature (i.e. the ocean) is not framed as inherently connected to our everyday life, and as crucial for our survival. On the other hand, for the most part, humans are not overtly framed as being responsible for the MLP (even though this is implicit). Thus, I would argue based on my findings, that the dependence relationship between the natural and the social system are not explicit in the frames, but rather presented as independent from each other.

What consequences does this have for people's view on the ocean? For the public this might mean that they have to redefine the ocean space which they have long seen as a 'non-territory' (Steinberg, 2001). This 'marine othering' – distancing the self from the marine environment – as Steinberg (2001) calls it, might be further enhanced by the absent or inexplicit human-nature relations within the articles. The consequences for the individual's perception of responsibility are difficult to pinpoint if we assume that responsibility rests upon that exact connection or relation between an individual and another entity, in this case the marine environment (Auhagen and Bierhoff, 2000). Thus, following Kals et al.'s (1999) line of argumentation, the emotional bond that can prove crucial for creating and assuming environmental responsibility might be lacking in these frames.

Pursuing the question of responsibility, one might ask if it is the individual or society, or both, who is lacking this relationship with nature. This proposes yet another question: is the individual framed as part of a greater society, and therefore, carries responsibility towards society (and, ultimately, nature)? This question will be dealt with in the following sub-chapter. Since individuals are largely framed as consumers who are set in connection to own consumption patterns, I would argue that they are mostly granted egoistic concerns, rather than biospheric ones (Schultz et al., 2004). This promotes further removing the

individual reader from being a part of nature (and even society). On the other hand, the frames suggest a generalized *society to be responsible for civilization's litter* which implies that individuals may be part of that society. However, I also see it as an opportunity for the individual (reader) to distance him/herself from the personal responsibility, if the problem and responsibility are placed on a higher, more abstract level of society.

Thus, even though human-nature relations are not explicitly framed in the articles, it also carries certain implications about this relationship. The suggested separation of humans from nature seems to be enhanced, while the individual also seems to be separated from society. If humans are seen as dominating over nature, or vice versa, is not clearly deducible from the frames. Though, the idea of an ocean which has become a threat stands in contrast to our idealized image of nature and the ocean. What remains is the question of what this means for our relation with and responsibility for the ocean? Or could this way of dramatically framing the problem contribute to a rethinking of our relationship to nature? These questions cannot be fully answered within the scope of this study; however, they might serve as thought-provoking questions for further research.

6.3 Construction of Responsibility within MLP frames

Departing from the assumption that the frames in the articles have an influence on how the individual (reader) perceives the MLP; the way human-nature and human-litter relations are framed will also have consequences for the individual's responsibility felt and assumed towards the MLP (cf. Social Constructivism). For now, I argue that *society* and *nature* are important systems which are decisive for the individual's responsibility felt towards the issue at hand and which encompass these precise relations (Auhagen and Bierhoff, 2000; Kals et al., 1999). Since responsibility is relational, the relation ones has towards an entity or context are crucial for developing responsibility (Bina and Vaz, 2011). There is, on one hand, the natural system and the question: *are humans a part of the natural system?* The frames at hand suggest rather a separation of humans from nature than that they are part of it. As a consequence, one could argue that this leads to *marine othering* and, ultimately, contributes to the MLP. On the other hand, there is the social system, i.e. society, which raises the question: *is the individual a part of society?* My initial question was how the *citizen* is framed as part of the problem. As it shows in the analysis, the individual is not framed as such, but rather as a consumer (or *citizen-consumer*) who is endowed with the freedom to choose his/her consumption patterns and therefore carries responsibility for the problem/solution. However, it does not set the individual in the framework of the broader (even global) society for which he/she also holds responsibility, and downplays the function of citizenship which describes the individual as a member of this society. The emphasis on human-litter relations and framing the issue as a behavioral problem of consumerism and our throw-away society neglects the underlying values that drive this behavior. Could we argue that such framing – appealing to consumers and consumption behavior – might even perpetuate this behavior and the status quo of the neoliberal economic system it is embedded in? Which implications would it have to speak of individuals who have responsibility towards society and a shared natural environment?

Looking at the ocean as a shared space and important source of life for the global society, we could describe it as a *common ocean* shared by all members of humanity (cf. Höhler, 2014). As such it is only weakly represented in the frames. Nevertheless, the way the magnitude of the problem is presented suggests a global scale and global implications. Yet, the question of shared responsibility for such a common ocean is not touched upon. I would like to state the assumption that it is this common responsibility for the natural environment, as well as social system, which would be crucial to establish in order to overcome the problem of marine litter. This also makes me assume that weak and blurred human-nature relations are at the core of the MLP, making it an issue of how we see

ourselves and our actions (e.g. consumption and littering) in relation to our social and natural environment. It implies seeing the self as a part of society, as well as nature, which carries responsibilities but also assures the individual a place within these systems.

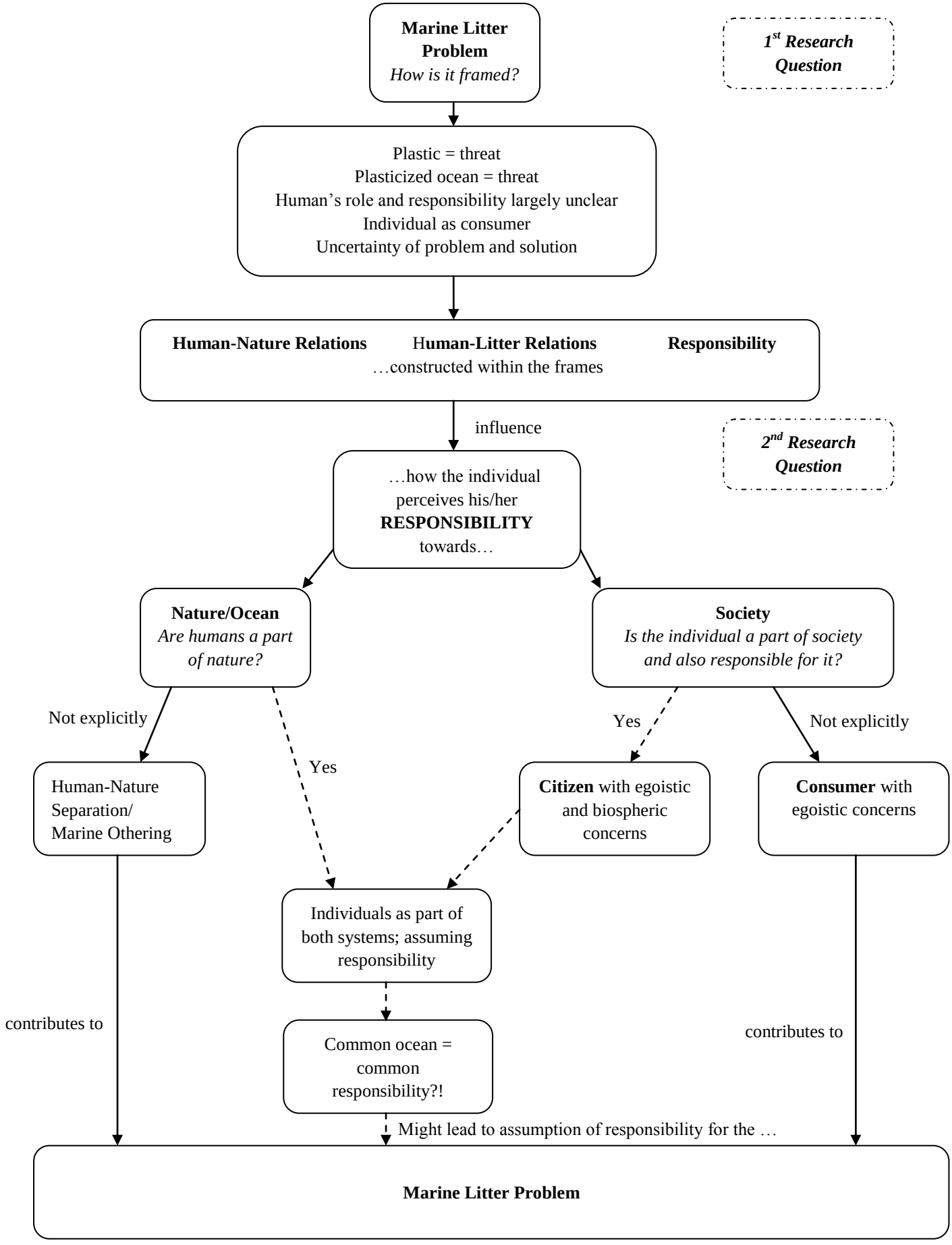
Coming back to my overall research question: *What implications might the frames have for the individual's assumption of responsibility for the marine litter problem?*

From my point of view, marine litter and the polluted ocean have forcefully become important topics especially within the academic and political, but also the mass media arena. The frames presented here add a new definition of ocean space to the existing ones. This emphasizes the role of the media, and specifically the newspaper articles under research here. Even though the articles mainly presented and interpreted scientific findings and political or NGO statements, as Keller (2000) also remarks critically; they serve as a way to initiate public awareness and open discussion about the marine litter topic. While the frames contribute to 'marine othering' – distancing the self from nature or the ocean – in some way; they might also offer a new conscious discussion of the marine environment and our interactions and responsibilities with it. Through that, ultimately, the marine litter discourse in the analyzed newspaper articles might even enable *marine citizenship*[1], instead of *marine othering*. However, if we look at the way responsibility is implicitly framed for the individual – resting the responsibility for the problem and, especially, the solution on the individual – we find a rather *external ascription* of responsibility (Kaiser et al., 2000), which can lead to denial of the responsibility. I argue that framing the individual as a citizen and part of the natural and social system would, on the other hand, enable an *internal ascription* (Kaiser et al., 2000) of responsibility because the individual – seeing his/her own relation to these systems – might accept responsibility more readily than in the former case.

What stays is the uncertainty of the total scope and consequences of the marine litter problem, which might enable more public discussions of human's relation to nature and litter. Taking into consideration that litter is suitable to start moralizing and responsibility processes in people due to its 'dirty' connotation (Keller, 2000); marine litter might very well serve that purpose, as it is polluting something that was long thought of as purely natural and largely resisting pollution.

A graph on the following page serves the function of illustrating the above line of argumentation in simplified and hopefully clarifying way. It is to be read from top to bottom, suggesting that the way the MLP is framed within the newspaper articles will influence the individual reader's perception of the problem and responsibility towards the two identified systems *nature* and *society*. Taking this further, the continuous lines demonstrate the current framing in the articles, which may contribute to and perpetuate the existing problem; while the dashed lines show my argumentation that framing humans as integrated part of these systems might ultimately lead to assumption of responsibility (and action) for the MLP.

[1] *Marine Citizenship*: McKinley and Fletcher (2012) describe marine citizenship as "the rights and responsibilities of an individual towards the marine environment, with individual marine citizens exhibiting an awareness of, and concern for, the marine environment, an understanding of the impacts of personal and collective behaviours on the marine environment, and is motivated to change personal behaviour to lessen its impact on the marine environment" (p. 840)



Graph 2: Simplified line of argumentation for how the framing of MLP influences the question of responsibility for nature and society, and ultimately, the MLP itself.

6.4 Limitations of Research

This research has aimed at contributing a further glimpse in the framing of environmental problems within the media. It has not done so with an emphasis on the role of media, but rather focusing on the construction of the content. This may have limited the results and discussion in ways, as it does not question how exactly the reader consumes and processes information in newspaper articles and what agenda the authors of the articles follow. Instead, resting it on the assumption of symbolic interactionism and social constructivism, I have assumed that the reader will use the articles to construct meaning of the MLP and will be influenced by the way they are framed. As such, I hope and believe to have contributed to a further discussion of how the marine environment and especially the newly emerged MLP are constructed within German newspapers. Even though this study cannot be generalized in the sense that the findings are apt to make statements of the general marine litter discourse in German newspapers, it provides a relevant insight into a carefully selected sample of important newspapers which assumedly have a large influence on public discourse in Germany.

Future Research

Naturally, while working with and trying to understand this subject, many new questions and research interests emerged which might inspire future research:

- A frame analysis of the MLP including other media, like TV, social media, etc.
- Researching the public's perception of the MLP and their reaction to the discourse presented here
- How is the marine litter discourse framed in other countries, especially non-Western ones? Compared to the discourse found in this analysis?
- How is the marine litter problem connected to other discourses about problems in the marine environment, e.g. other forms of pollution, acidification, overfishing?

7. Conclusion

Marine litter is a rather recent topic which has only begun to claim media attention. However, its urgency and rather graspable appearance have catapulted it into the political and also public debate. Because of the issue's quite young age, newspaper articles are mostly holding on to newly released scientific evidence or political action. So far, there has been unanimous agreement that the problem exists and is urgent, which is apparent in the frames under research.

However, having conducted a frame analysis of 37 German newspaper articles, I would argue that the frames are displaying the problem relatively one-sided with a focus on the litter, rather than in the context of the complex social and natural systems in which this problem is embedded. Nature-litter relations are on the forefront of the frames, such as describing a *plasticized ocean* which has become a threat. The marine natural system, humans and also society play a secondary role within the frames and are mainly seen in connection to litter, but not to each other. This complicates the – in my opinion crucial – issue of human-nature relations and responsibilities that are neither defined nor fostered within the frames, but are at the core of the marine litter problem, as it is argued in this research. Furthermore, the frames suggest that humans are neither part of society nor the natural system. This has lead to the assumption that it is a common responsibility for the natural environment, as well as the social system, which would be crucial to establish in order to overcome the problem of marine litter. Granting individuals agency, depicting them as consumers rather than citizens, and seeing humans as separate from most systems, may even contribute to perpetuating the system, values and behaviors that have led to the MLP. On the other hand, it might very well serve as a mirror for society and our harmful behavior. Thus, perhaps the marine litter discourse in the analyzed newspaper articles possesses the potential and power to inflict a transformation of how society perceives and reacts towards the MLP because it is graspable (despite its complexity) and threatening.

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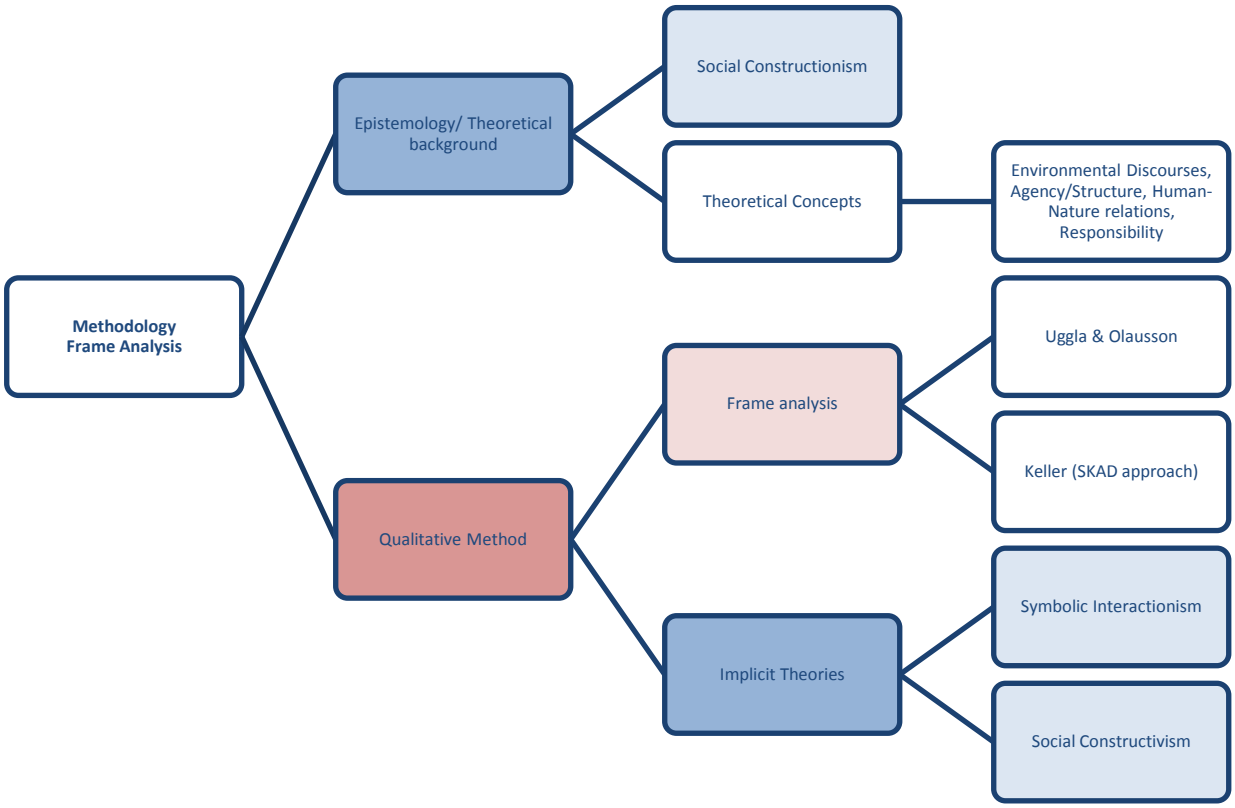
Appendices

Appendix 1 – Overview of Methodological Approach



Graph 3: Overview of Theories and Methods used in the Study

Appendix 2 – Analytical Toolbox (Uggla & Olausson, 2013)

- **Placement of information in the structure of the text**. *Which themes and topics e.g., statements, arguments are granted prominence (in a hierarchal order) and thereby made salient? Special attention is paid to headlines and captions.*
- **Repetition of information**. *In what ways are certain items of information repeated and thus made salient?*
- **Association of information with culturally familiar symbols**. *In what ways are certain items of information anchored in a familiar interpretative framework and thus made salient?*
- **Metaphors**. *In what ways are metaphors used to make information salient?*
- **Catchphrases**. *In what ways are phrases designed to capture attention used to make information salient?*
- **Visual images**. *In what ways are visual images used to make information salient?*
- **Distinctions and contrasts**. *In what ways are distinctions and contrasts used to make information salient?*

Appendix 3 – Dimensions in Analysis Matrix

Dimensions	Text 1	Text 2	Text 3 etc
Causes			
Actors			
esp. public/citizens			
Responsibilities			
Need for action/ problem-solving			
(type of) Solution			
Global/ local context			

Appendix 4 – Empirical Data

In order of appearance:

Newspaper Codes and Article Titles with Sources p. II
First Analysis, Step 1: Toolbox p. VI
First Analysis, Step 2: Dimensions pp. VII-VIII
Second Analysis, Step 1: Toolbox pp. IX-X
Second Analysis, Step 2: Dimensions pp. XI-XII

Newspaper Codes and Article Titles with Sources

Sorted according to the empirical data list

1	SZ 1	Gefährliches Plastikmeer - *Verschmutzung der Ozeane*	SZ, 2014. *Süddeutsche Zeitung online*. Gefährliches Plastikmeer - *Verschmutzung der Ozeane*, available at: http://www.sueddeutsche.de/panorama/verschmutzung-der-ozeane-plastikmeer-1.1927740 [accessed March 2015]
2	SZ 2	Plastikmüll treibt in ungeahnten Wassertiefen - *Warnung europäischer Forscher*	SZ, 2014. *Süddeutsche Zeitung online*. Plastikmüll treibt in ungeahnten Wassertiefen - *Warnung europäischer Forscher*, available at: http://www.sueddeutsche.de/wissen/warnung-europaeischer-forscher-plastikmuell-treibt-in-ungeahnten-wassertiefen-1.1947830 [accessed March 2015]
3	SZ 3	Müll über Bord - *Illegale Entsorgung*	Purtul, 2014. *Süddeutsche Zeitung online*. Müll über Bord - *Illegale Entsorgung*, available at: http://www.sueddeutsche.de/wissen/illegale-entsorgung-muell-ueber-bord-1.1958609 [accessed March 2015]
4	SZ 4	Forscher warnen vor Ozean-Filtern - *Umweltschutz*	Zierul, 2014. *Süddeutsche Zeitung online*. Forscher warnen vor Ozean-Filtern – *Umweltschutz*, available at: http://www.sueddeutsche.de/wissen/umweltschutz-ozeanforscher-warnen-vor-ozeansaeuberungs-projekt-1.2095367 [accessed March 2015]
5	SZ 5	Die sieben Meere des Mülls - *Kartierung mit Plastikmüll*	Schrader, 2014. *Süddeutsche Zeitung online*. Die sieben Meere des Mülls - *Kartierung mit Plastikmüll*, available at: http://www.sueddeutsche.de/wissen/kartierung-mit-plastikmuell-die-sieben-meere-des-muells-1.2112973 [accessed March 2015]
6	SZ 6	Plastik unter Palmen - *Plastik im Ozean*	Von der Hagen, 2014. *Süddeutsche Zeitung online*. Plastik unter Palmen - *Plastik im Ozean*, available at: http://www.sueddeutsche.de/wirtschaft/plastik-im-ozean-plastik-unter-palmen-1.2117324-2 [accessed March 2015]
7	SZ 7	Der Ozean als Müllkippe - *Frankfurter Buchmesse*	Häntzschel, 2014. *Süddeutsche Zeitung online*. Der Ozean als Müllkippe - *Frankfurter Buchmesse*, available at:

			http://www.sueddeutsche.de/kultur/frankfurter-buchmesse-der-ozean-als-muellkippe-1.2167445 [accessed March 2015]
8	SZ 8	Kommt in die Tüte - *EU gegen Plastiktaschen*	Conradi, 2014. *Süddeutsche Zeitung online*. Kommt in die Tüte - *EU gegen Plastiktaschen*, available at: http://www.sueddeutsche.de/wirtschaft/eu-gegen-plastiktaschen-kommt-in-die-tuete-1.2225852 [accessed March 2015]
9	SZ 9	Einigung in Brüssel - EU bekämpft Plastiktüten	SZ, 2015. *Süddeutsche Zeitung online*. Einigung in Brüssel - EU bekämpft Plastiktüten, available at: http://www.sueddeutsche.de/wirtschaft/einigung-in-bruessel-eu-bekaempft-plastiktueten-1.2225630 [accessed March 2015]
10	SZ 10	Mikroplastik - Umweltgefahr aus dem Drogeriemarkt	SZ, 2015. *Süddeutsche Zeitung online*. Mikroplastik - Umweltgefahr aus dem Drogeriemarkt, available at: http://www.sueddeutsche.de/wissen/2.220/mikroplastik-umweltgefahr-aus-dem-drogeriemarkt-1.2324544 [accessed March 2015]
11	SZ 11	Die dunkle Materie des Ozeans	Weiss, 2014. *Süddeutsche Zeitung*. Die dunkle Materie des Ozeans
12	BILD 1	Plastik-Abfall gefährlicher als Klimawandel - *Die Welt versinkt im Müll*	Krause, B., 2014. *BILD online*. Plastik-Abfall gefährlicher als Klimawandel - *Die Welt versinkt im Müll*, available at: http://www.bild.de/news/ausland/muell/muell-gefaehrlicher-als-klimawandel-37906858.bild.html [accessed March 2015]
13	BILD 2	DAS landet irgendwann auch auf unserem Teller! - *Fast 270 000 Tonnen Plastikmüll schwimmen auf dem Meer*	BILD, 2014. *BILD online*. DAS landet irgendwann auch auf unserem Teller! - *Fast 270 000 Tonnen Plastikmüll schwimmen auf dem Meer*, available at: http://www.bild.de/news/ausland/umweltverschmutzung/neue-studie-zu-plastikmuell-in-weltmeeren-fast-270-000-tonnen-38930608.bild.html [accessed March 2015]
14	BILD 3	Teenager will ALLE Ozeane von Plastikmüll befreien – *Holländer Boyan Slat (19)*	BILD, 2014. *BILD online*. Teenager will ALLE Ozeane von Plastikmüll befreien – *Holländer Boyan Slat (19)*, available at: http://www.bild.de/news/ausland/muell/teenager-fischt-plastik-aus-meer-36362794.bild.html [accessed March 2015]
15	WELT 1	Müll verteilt sich bis in die Tiefseegräben	WELT, 2014. *Welt online*. Müll verteilt sich bis in die Tiefseegräben, available at: http://www.welt.de/print/die_welt/wissen/article127527593/Muell-verteilt-sich-bis-in-die-Tiefseegraeben.html [accessed March 2015]
16	WELT 2	Der Hafen, der Müll und das Meer	Meyer-Wellmann, 2014. *Welt online*. Der Hafen, der Müll und das Meer, available at: http://www.welt.de/print/welt_kompakt/hamburg/article128619171/Der-Hafen-der-Muell-und-das-Meer.html [accessed March 2015]
17	WELT 3	Der Kampf gegen die weitere Vermüllung der Meere - *Schiffsverkehr*	Meyer-Wellmann, 2014. *Welt online*. Der Kampf gegen die weitere Vermüllung der Meere – *Schiffsverkehr*, available at: http://www.welt.de/regionales/hamburg/article128637719/Der-Kampf-gegen-die-weitere-Vermuellung-der-Meere.html [accessed March 2015]
18	WELT 4	Müll aus der Nordsee soll Informationen liefern - *Meeresschutz*	Wöste, 2014. *Welt online*. Müll aus der Nordsee soll Informationen liefern – *Meeresschutz*, available at: http://www.welt.de/regionales/hamburg/article130185347/Muell-aus-der-Nordsee-soll-Informationen-liefern.html [accessed March 2015]
19	WELT 5	Meere voller Plastikmüll	WELT, 2014. *Welt online*. Meere voller Plastikmüll, available at: http://www.welt.de/print/wams/wissen/article134380119/Meere-voller-Plastikmuell.html [accessed March 2015]
20	WELT 6	269.000 Tonnen Plastik gefährden die Meere –	Aspetsberger, 2014. *Welt online*. 269.000 Tonnen Plastik gefährden die Meere – *Umwelt*, available at:

		Umwelt	http://www.welt.de/wissenschaft/umwelt/article135237702/269-000-Tonnen-Plastik-gefaehrden-die-Meere.html [accessed March 2015]
21	WELT 7	Wo irrwitzige Mengen an Plastikmüll verschwinden – *Meeresforschung*	Garms, 2014. *Welt online*. Wo irrwitzige Mengen an Plastikmüll verschwinden – *Meeresforschung* , available at: http://www.welt.de/wissenschaft/umwelt/article135525730/Wo-irrwitzige-Mengen-an-Plastikmuell-verschwinden.html [accessed March 2015]
22	TAZ 1	Die Plastifizierung der Ozeane - *Zukunft*	TAZ, 2014. *TAZ.de online*. Die Plastifizierung der Ozeane – *Zukunft*, available at: http://taz.de/Zukunft/!138357/ [accessed March 2015]
23	TAZ 2	Flasche mit Meerwert – *Recycling von Ozeanmüll*	TAZ, 2014. *TAZ.de online*. Flasche mit Meerwert – *Recycling von Ozeanmüll*, available at: http://taz.de/Recycling-von-Ozeanmuell/!139082/ [accessed March 2015]
24	TAZ 3	Dem Müll auf der Spur – *Meereschutz*	TAZ, 2014. *TAZ.de online*. Dem Müll auf der Spur – *Meereschutz*, available at: http://taz.de/Meeresschutz/!143937/ [accessed March 2015]
25	TAZ 4	Die unsichtbare Gefahr - *Plastik rutscht durch*	TAZ, 2014. *TAZ.de online*. Die unsichtbare Gefahr - *Plastik rutscht durch*, available at: http://taz.de/Plastik-rutscht-durch/!148671/ [accessed March 2015]
26	TAZ 5	Müllteppich im Meer – EU will weniger Plastiktüten	TAZ, 2014. *TAZ.de online*. Müllteppich im Meer – EU will weniger Plastiktüten, available at: http://taz.de/EU-will-weniger-Plastiktueten-/!149713/ [accessed March 2015]
27	TAZ 6	270.000 Tonnen Plastikmüll – Verschmutzung der Weltmeere	TAZ, 2014. *TAZ.de online*. 270.000 Tonnen Plastikmüll – Verschmutzung der Weltmeere, available at: http://taz.de/Verschmutzung-der-Weltmeere/!151083/ [accessed March 2015]
28	TAZ 7	Abfall reicht bis in die Arktis - Verschmutzung der Meere	TAZ, 2014. *TAZ.de online*. Abfall reicht bis in die Arktis - Verschmutzung der Meere, available at: http://taz.de/Verschmutzung-der-Meere/!137672/ [accessed March 2015]
29	TAZ 8	Wie Muscheln auf Sylt - Studie zu Plastikmüll im Meer	TAZ, 2015. *TAZ.de online*. Wie Muscheln auf Sylt - Studie zu Plastikmüll im Meer, available at: http://taz.de/Studie-zu-Plastikmuell-im-Meer/!154701/ [accessed March 2015]
30	TAZ 9	Ein Skateboard aus Müll - Start-Up in Chile	TAZ, 2014. *TAZ.de online*. Ein Skateboard aus Müll - Start-Up in Chile, available at: http://taz.de/Start-Up-in-Chile/!141906/ [accessed March 2015]
31	TAZ 10	Die reinste Müllhalde - Verschmutzung durch Plastik	TAZ, 2014. *TAZ.de online*. Die reinste Müllhalde - Verschmutzung durch Plastik, available at: http://taz.de/Verschmutzung-durch-Plastik/!142701/ [accessed March 2015]
32	FAZ 1	Inventur des schwimmenden Plastikmülls – *Müllkippe Ozean*	FAZ, 2014. *FAZ online*. Inventur des schwimmenden Plastikmülls – *Müllkippe Ozean*, available at: http://www.faz.net [accessed March 2015]
33	FAZ 2	Vermüllter Meeresgrund – *Glosse*	Lindinger, 2014. *FAZ online*. Vermüllter Meeresgrund – *Glosse*, available at: http://www.faz.net [accessed March 2015]
34	FAZ 3	Politpoker mit Plastik – *Wie Meeresmüll verhindern?*	Schwägerl, 2015. *FAZ online*. Politpoker mit Plastik – *Wie Meeresmüll verhindern?*, available at: http://www.faz.net/aktuell/wissen/erde/politpoker-mit-plastik-wie-den-meeresmuell-verhindern-13460016.html [accessed March 2015]
35	FAZ 4	Die Explosion der Plastosphäre – *Müllberge im Meer wachsen*	Müller-Jung, 2015. Die Explosion der Plastosphäre – *Müllberge im Meer wachsen*, available at: http://www.faz.net/aktuell/wissen/muellberge-im-meer-wachsen-die-explosion-der-plastosphaere-13425656.html

			[accessed March 2015]
36	FAZ 5	Plastikpartikel in Hautcremes gefährden Umwelt – *Umweltbundesamt*	FAZ, 2015. *FAZ online*. Plastikpartikel in Hautcremes gefährden Umwelt – *Umweltbundesamt*, available at: http://www.faz.net [accessed March 2015]
37	FAZ 6	Polymerchemie Leben mit Plastik	Menne, 2015. *FAZ online*. Polymerchemie Leben mit Plastik, available at: http://www.faz.net [accessed March 2015]

						Title only	Title & abstract			
	Newspape	Code	Articles	# Words	Problem/Solution	Placement of info in title	Association w/ cultural symbols	Metaphors	Catchphrases	Distinctions & contrasts
1	SZ	SZ 1	Gefährliches Plastikmeer - *Verschmutzung der Ozeane*	899	Problem	danger, plastic, pollution	everyday items			
2	SZ	SZ 2	Plastikmüll treibt in ungeahnten Wassertiefen - *Warnung europäischer Forscher*	426	Problem	warning, scientists, deep sea				
3	SZ	SZ 3	Müll über Bord - *Illegale Entsorgung*	1106	Problem	illegal dumping				
4	SZ	SZ 4	Forscher warnen vor Ozean-Filtern - *Umweltschutz*	1242	Solution	scientists warn, protection				
5	SZ	SZ 5	Die sieben Meere des Mülls - *Kartierung mit Plastikmüll*	222		plastic takes over			sieben meere des muells	using litter for science ->
6	SZ	SZ 6	Plastik unter Palmen - *Plastik im Ozean*	1636	Problem	plastic, beach, ocean	paradise --> lost?!			
7	SZ	SZ 7	Der Ozean als Müllkippe - *Frankfurter Buchmesse*	238	Problem/Solution	ocean = garbage dump				
8	SZ	SZ 8	Kommt in die Tüte - *EU gegen Plastiktaschen*	927	Solution	plastic bag, EU				
9	SZ	SZ 9	Einigung in Brüssel - EU bekämpft Plastiktüten	619	Solution					
10	SZ	SZ 10	Mikroplastik - Umweltgefahr aus dem Drogeriemarkt	670	Problem					
11	SZ	SZ 11	Die dunkle Materie des Ozeans	n/a	Problem	uncertainty		dark matter of the universe -->uncertainty		
12	BILD	BILD 1	Plastik-Abfall gefährlicher als Klimawandel - *Die Welt versinkt im Müll*		Problem	plastic takes over, danger				compare w/ climate chan
13	BILD	BILD 2	DAS landet irgendwann auch auf unserem Teller! - *Fast 270 000 Tonnen Plastikmüll schwimmen a*		Problem	boomerang effect, amount				
14	BILD	BILD 3	Teenager will ALLE Ozeane von Plastikmüll befreien – *Holländer Boyan Slat (19)*		Solution	ocean clean up				
15	WELT	WELT 1	Müll verteilt sich bis in die Tiefseegräben	151	Problem	plastic in deep sea				
16	WELT	WELT 2	Der Hafen, der Müll und das Meer	432	Problem/Solution	harbor, litter, ocean			"ocean suffers" --> subject	
17	WELT	WELT 3	Der Kampf gegen die weitere Vermüllung der Meere - *Schiffsverkehr*	652	Problem/Solution	fight against litter, shipping				
18	WELT	WELT 4	Müll aus der Nordsee soll Informationen liefern - *Meeresschutz*	354	Problem/Solution	use litter, protection				
19	WELT	WELT 5	Meere voller Plastikmüll	325	Problem	plastic takes over				
20	WELT	WELT 6	269.000 Tonnen Plastik gefährden die Meere – *Umwelt*	575	Problem	danger, plastic, amount				
21	WELT	WELT 7	Wo irrwitzige Mengen an Plastikmüll verschwinden – *Meeresforschung*	640	Problem	amount, uncertainty, science				
22	TAZ	TAZ 1	Die Plastifizierung der Ozeane - *Zukunft*	780	Problem	plastic takes over			Plastifizierung	
23	TAZ	TAZ 2	Flasche mit Meerwert – *Recycling von Ozeanmüll*	377	Solution	recycling, use litter				
24	TAZ	TAZ 3	Dem Müll auf der Spur – *Meereschutz*	685		science, protection				
25	TAZ	TAZ 4	Die unsichtbare Gefahr - *Plastik rutscht durch*	544	Problem	uncertainty, danger				
26	TAZ	TAZ 5	Müllteppich im Meer – EU will weniger Plastiktüten	308	Solution	plastic takes over, EU, plastic bag				
27	TAZ	TAZ 6	270.000 Tonnen Plastikmüll – Verschmutzung der Weltmeere	262	Problem	amount, pollution				
28	TAZ	TAZ 7	Abfall reicht bis in die Arktis - Verschmutzung der Meere	421	Problem					
29	TAZ	TAZ 8	Wie Muscheln auf Sylt - Studie zu Plastikmüll im Meer	433	Problem					
30	TAZ	TAZ 9	Ein Skateboard aus Müll - Start-Up in Chile	793	Solution					
31	TAZ	TAZ 10	Die reinste Müllhalde - Verschmutzung durch Plastik	278	Problem					
32	FAZ	FAZ 1	Inventur des schwimmenden Plastikmülls – *Müllkippe Ozean*			ocean = garbage dump, science				
33	FAZ	FAZ 2	Vermüllter Meeresgrund – *Glosse*		Problem	pollution, deep sea				
34	FAZ	FAZ 3	Politpoker mit Plastik – *Wie Meeresmüll verhindern?*		Problem/Solution	politics, avoidance		Muellberge wachsen		
35	FAZ	FAZ 4	Die Explosion der Plastosphäre – *Müllberge im Meer wachsen*		Problem	plastic takes over			plastosphaere	
36	FAZ	FAZ 5	Plastikpartikel in Hautcremes gefährden Umwelt – *Umweltbundesamt*		Problem	plastic in everyday item, danger				
37	FAZ	FAZ 6	Polymerchemie Leben mit Plastik		Problem/Solution	plastic in everyday				

Legend:

articles contains <400 words

chosen artides for further analysis

			Problem					
			What is the problem?	Why is it a problem?	Who is responsible?		CODE	
	Newspaper	Articles	cause/origin	consequences	actor/responsibilities	indiv. humans part of problem?	scale/local-global	H-N-L relations
1	SZ	Gefährliches Plastikmeer - *Verschmutzung der Ozeane*	dangerous plastic				global, far corners	NL
2	SZ	Plastikmüll treibt in ungeahnten Wassertiefen - *Warnung europäischer Forscher*	plastic everywhere, deep sea					NL
3	SZ	Müll über Bord - *Illegale Entsorgung*	illegal dumping, weak punishment	grave consequences	captains on ships	humans litter consciously		HL NL
4	SZ	Forscher warnen vor Ozean-Filtern - *Umweltschutz*						
5	SZ	Die sieben Meere des Mülls - *Kartierung mit Plastikmüll*					global	NL
6	SZ	Plastik unter Palmen - *Plastik im Ozean*	litter changes nature				global	NL
7	SZ	Der Ozean als Müllkippe - *Frankfurter Buchmesse*	climate needs healthy ocean, ocean = garbage dump			?	global	NL HN
8	SZ	Kommt in die Tüte - *EU gegen Plastiktaschen*	plastic bags, high production & use	end up in ocean	?	?	global	HL?
9	SZ	Die dunkle Materie des Ozeans	plastic in deep sea	uncertain consequences			global	NL
10	BILD	Plastik-Abfall gefährlicher als Klimawandel - *Die Welt versinkt im Müll*	dangerous plastic, world drowning in litter				global	HL
11	BILD	DAS landet irgendwann auch auf unserem Teller! - *Fast 270 000 Tonnen Plastikmü*	ocean drowning in litter, warnings not taken seriously	food chain		?	global	HL NL
12	BILD	Teenager will ALLE Ozeane von Plastikmüll befreien – *Holländer Boyan Slat (19)*					global	HL
13	WELT	Müll verteilt sich bis in die Tiefseegräben	plastic in deep sea, microparticles	worrying				NL
14	WELT	Der Hafen, der Müll und das Meer	garbage fee in harbours too high	ocean suffers				NL
15	WELT	Der Kampf gegen die weitere Vermüllung der Meere - *Schiffsverkehr*	illegal dumping	ocean littered	ships/shipping industry	humans litter consciously	global	HL
16	WELT	Müll aus der Nordsee soll Informationen liefern - *Meeresschutz*						
17	WELT	Meere voller Plastikmüll	dangerous plastic, garbage island	ocean & inhabitants suffer				NL
18	WELT	269.000 Tonnen Plastik gefährden die Meere – *Umwelt*	dangerous plastic	ocean suffers			global	NL
19	WELT	Wo irrwitzige Mengen an Plastikmüll verschwinden – *Meeresforschung*	deep sea, plastic disappears	uncertain consequences			global	NL
20	TAZ	Die Plastifizierung der Ozeane - *Zukunft*	ocean becomes plastified					NL
21	TAZ	Flasche mit Meerwert – *Recycling von Ozeanmüll*						
22	TAZ	Dem Müll auf der Spur – *Meereschutz*	society's litter	deathly consequences for animals			local	HL NL
23	TAZ	Die unsichtbare Gefahr - *Plastik rutscht durch*	dangerous plastic, micro plastic	dangerous for animals	ineffective sewage treatment	?		HL NL
24	TAZ	Mülteppich im Meer – EU will weniger Plastiktüten	plastic bags, covering ocean					HL
25	TAZ	270.000 Tonnen Plastikmüll – Verschmutzung der Weltmeere	plastic pollutes ocean	uncertain amount				NL
26	FAZ	Inventur des schwimmenden Plastikmülls – *Müllkippe Ozean*	ocean = garbage dump	high amount				HL NL
27	FAZ	Vermüllter Meeresgrund – *Glosse*	plastic in deep sea	alarming pollution	throw-away society	indirectly		HL NL
28	FAZ	Politpoker mit Plastik – *Wie Meeresmüll verhindern?*	no political action for 40 years					HL
29	FAZ	Die Explosion der Plastosphäre – *Müllberge im Meer wachsen*	plastic pollutes ocean, increasing amounts	uncertain where it ends up			global	NL
30	FAZ	Plastikpartikel in Hautcremes gefährden Umwelt – *Umweltbundesamt*	dangerous microplastic	threat for environmen	ineffective sewage treatment			NL
31	FAZ	Polymerchemie Leben mit Plastik	plastic is everywhere		"we"	humans conscious use		HL

			Solution			
	Newspaper	**Articles**	need/call for action	type of action/solution	actors/responsibilities	H-N-L relations
1	SZ	Gefährliches Plastikmeer - *Verschmutzung der Ozeane*				
2	SZ	Plastikmüll treibt in ungeahnten Wassertiefen - *Warnung europäischer Forscher*				
3	SZ	Müll über Bord - *Illegale Entsorgung*	easy solution available			
4	SZ	Forscher warnen vor Ozean-Filtern - *Umweltschutz*	clean ocean	technical solution	experts	HN
5	SZ	Die sieben Meere des Mülls - *Kartierung mit Plastikmüll*	use litter	research with litter	experts/scientists	HNL?
6	SZ	Plastik unter Palmen - *Plastik im Ozean*				
7	SZ	Der Ozean als Müllkippe - *Frankfurter Buchmesse*	take responsibility			HN
8	SZ	Kommt in die Tüte - *EU gegen Plastiktaschen*	reduce usage	regulation?	EU	HL
9	SZ	Die dunkle Materie des Ozeans				
10	BILD	Plastik-Abfall gefährlicher als Klimawandel - *Die Welt versinkt im Müll*				
11	BILD	DAS landet irgendwann auch auf unserem Teller! - *Fast 270 000 Tonnen Plastikmü*	concrete research on issue	research on litter		
12	BILD	Teenager will ALLE Ozeane von Plastikmüll befreien – *Holländer Boyan Slat (19)*	clean ocean	technical solution		HL
13	WELT	Müll verteilt sich bis in die Tiefseegräben				
14	WELT	Der Hafen, der Müll und das Meer	reform	regulation?	politics	HL?
15	WELT	Der Kampf gegen die weitere Vermüllung der Meere - *Schiffsverkehr*	reform	regulation?	politics	HL?
16	WELT	Müll aus der Nordsee soll Informationen liefern - *Meeresschutz*	research, fishing for litter	research on litter	scientists	HL
17	WELT	Meere voller Plastikmüll				
18	WELT	269.000 Tonnen Plastik gefährden die Meere – *Umwelt*				
19	WELT	Wo irrwitzige Mengen an Plastikmüll verschwinden – *Meeresforschung*				
20	TAZ	Die Plastifizierung der Ozeane - *Zukunft*			EU, environmentalists	
21	TAZ	Flasche mit Meerwert – *Recycling von Ozeanmüll*	use litter	recycling	private industry	HL
22	TAZ	Dem Müll auf der Spur – *Meereschutz*	awareness, avoid litter		env. NGO	HL
23	TAZ	Die unsichtbare Gefahr - *Plastik rutscht durch*				
24	TAZ	Müllteppich im Meer – EU will weniger Plastiktüten	reduce usage	regulation	EU	HL
25	TAZ	270.000 Tonnen Plastikmüll – Verschmutzung der Weltmeere				
26	FAZ	Inventur des schwimmenden Plastikmülls – *Müllkippe Ozean*				
27	FAZ	Vermüllter Meeresgrund – *Glosse*				
28	FAZ	Politpoker mit Plastik – *Wie Meeresmüll verhindern?*	avoid litter	political concept	politics	HL
29	FAZ	Die Explosion der Plastosphäre – *Müllberge im Meer wachsen*				
30	FAZ	Plastikpartikel in Hautcremes gefährden Umwelt – *Umweltbundesamt*				
31	FAZ	Polymerchemie Leben mit Plastik	humans conscious use	innovation	"we"	HL

			Step 1: Toolbox				
	Code	Articles	Placement of info in title/heading	Association w/ cultural symbols	Metaphors, Catchphrases	Visual images	Distinctions & contrasts
1	SZ 1	Gefährliches Plastikmeer - *Verschmutzung der Ozeane*	Tonnen von Müll bedrohen die Weltmeere -> danger, magnitude, apocalyptic	everyday items (tooth brush, fridge, garden chair) become dangerous	Albatrosse mit Feuerzeug im Magen/Wale, die Plastik essen -> alienation, charismatic species; kein teil der weltmeere ist mehr frei von Plastik	plastic beach -> alienation; intact underwater reef -> contrast to text	gigantic gyre has size of central europe
2	SZ 2	Plastikmüll treibt in ungeahnten Wassertiefen - *Warnung europäischer Forscher*	warning of european researchers		alarming picture: plastic even in deep sea & uncertain consequences; Der Müll hat scheinbar schon lange vor uns diesen unbekannten Teil der Erde erreicht	plastic beach & dark background -> dramatic	
3	SZ 3	Müll über Bord - *Illegale Entsorgung*	illegal dumping, litter handling, culprits		Man stelle sich vor, Mülltonnen an Autobahnraststätten hätten Münzschlitze und jeder Einwurf kostete Geld.		
4	SZ 4	Forscher warnen vor Ozean-Filtern - *Umweltschutz*	warning of researchers; Treiben 100 Millionen oder nur 35 000 Tonnen Müll im Meer? -> dimension, uncertainty		"den Wasserhahn zuzudrehen statt die Badewanne mit einem Fingerhut leeren zu wollen" ; "nur ein Pflaster, aber keine Heilung der eigentlichen Krankheit" -> weak solution		
5	SZ 6	Plastik unter Palmen - *Plastik im Ozean*		plastic under palm trees, im Wasser der Südsee einen höchstens die Seegurken irritieren, die Strände verlockend und die Palmen natürlich ein Traum sind. -> illusion of paradise; everyday items	Plastik im Ozean - bei diesem Thema gibt es viele Vielleichts -> uncertainty; plastic soup; plastiglomerates – new rock made of plastic; Fossil der Zukunft ist die geschmolzene Zahnbürste	plastic on beach -> lost paradise, alienation	als habe einer Konfetti ins Wasser gestreut -> alienation; Billig. Vielseitig. Haltbar. Plastik hat sich über alle Welt verbreitet - mit Folgen: Es ist selbst in entlegensten Weltregionen allgegenwärtig, und seine Haltbarkeit ist zum Fluch geworden. -> Plastic = threat & curse Contrast positive aspects of plastic with negative ones
6	SZ 8	Kommt in die Tüte - *EU gegen Plastiktaschen*	large amounts of plastic bag production → land in ocean; EU wants to reduce consumption	Plastic bag = once progress, now symbol of throw-away society		plastic on beach -> lost paradise, alienation	Short life time of plastic bag - Long life in ocean; Contrast – germany with „non-industrial" countries
7	SZ 10	Mikroplastik - Umweltgefahr aus dem Drogeriemarkt	environmental danger	microplastic in everyday items	Dramatic consequences for environment		
8	BILD 1	Plastik-Abfall gefährlicher als Klimawandel - *Die Welt versinkt im Müll*	More dangerous than climate change; world is drowning in litter; Plastic – wonder material to the curse for the environment	Disgusting – emotion	Dirt soup instead of blue ocean -> paradise lost; Whale, dead, 100 plastic bags -> tragic ; „litter flood"	Child „drowning" in litter; Littered beach & people; Garbage mountains; Litter, animals & humans; Littered water, humans trying to fish litter out; Littered environment; Litter & humans	Plastic as part of everyday life -> intrinsically linked to our lifes; plastic is genious, long-lasting & comfortable → difficult to get rid of life style?! ; Pro Sekunde landen 1500 Plastikflaschen auf Müllkippen -> dimension
9	BILD 2	DAS landet irgendwann auch auf unserem Teller! - *Fast 270 000 Tonnen Plastikmüll schwimmen auf dem Meer*	Boomerang effect; Dimension	Plastic: unaestetic & potentially deadly		Littered water, humans; Littered beach, humans; Dirty water 2x;	
10	BILD 3	Teenager will ALLE Ozeane von Plastikmüll befreien – *Holländer Boyan Slat (19)*	Free all oceans from plastic -> hope; hero	Emotion – anger			Litter carpet as big as india

			Step 1: Toolbox				
	Code	Articles	Placement of info in title/heading	Association w/ cultural symbols	Metaphors, Catchphrases	Visual images	Distinctions & contrasts
11	WELT 3	Der Kampf gegen die weitere Vermüllung der Meere - *Schiffsverkehr*	fight against more pollution -> active				
12	WELT 6	269.000 Tonnen Plastik gefährden die Meere – *Umwelt*	269000 tons endanger the oceans -> dimension, danger		5 trillion plastic particles -> dimension		Tiere fressen Müll – und sterben
13	WELT 7	Wo irrwitzige Mengen an Plastikmüll verschwinden – *Meeresforschung*	Wo irrwitzige Mengen an Plastikmüll verschwinden -> Absurd/ridiculous amounts & uncapable problem	everyday items (cigarette butts, clothing)	all oceans are plagued with litter; gigantic amounts -> dimension		
14	TAZ 1	Die Plastifizierung der Ozeane - *Zukunft*	plasticization of the oceans; future	everyday item = source of litter	High amount of personal consumption; plastic diet		garbage patch = size of west europe -> dimension; jährlich 20.000 Tonnen Müll, was dem Gewicht von 4.000 Elefanten entspräche
15	TAZ 3	Dem Müll auf der Spur – *Meereschutz*	society's litter kills	everyday items = hochgefaehrlich	Giftig und sogar tödlich: Zivilisationsmüll ist eine schwere Bedrohung des Lebens in den Meeren. -> Society's waste = great threat to life in the oceans; hochgefaehrlich	plastic bag in ocean -> danger/poison death	Contrast – more garbage into ocean than fish
16	TAZ 4	Die unsichtbare Gefahr - *Plastik rutscht durch*	Invivible danger -> uncertainty	Everyday items = danger for animals & humans, source of microplastic	"huge problem", fleece as an ecological desaster		
17	TAZ 7	Abfall reicht bis in die Arktis - Verschmutzung der Meere	Abfall reicht bis in die Arktis -> ubiquity, alienation	Der Müll hat scheinbar schon lange vor uns diesen unbekannten Teil der Erde erreicht", Das stimme „schon traurig" -> emotion	Meere bereits bis weit in die Arktis Müllhalden -> ocean = garbage dump	plastic bag in ocean -> our ocean is becoming a garbage dump, alienation	
18	TAZ 8	Wie Muscheln auf Sylt - Studie zu Plastikmüll im Meer	Like shells on a beach -> ubiquity		enormous amounts	plastic bag in ocean -> "almost beautiful", dangerous, alienation	Contrast – plastic litter = shells -> plasticization; Mit der Menge ließe sich eine Fläche, die 34 Mal so groß sei wie der New Yorker Stadtteil Manhattan knöcheltief mit Müll bedecken. -> magnitude
19	FAZ 3	Politpoker mit Plastik – *Wie Meeresmüll verhindern?*	political poker game with plastic	our generation	wir schaffen auf dem meersegrund eine plastikschicht, mit der sich unsere generation markiert; in den vergangenen vierzig jahren is der preis kollektiver ignoranz gewaltig gewachsen	plastic on beach; plastic bag on street in berlin	leid und tod der meeresbewohner in den fokus
20	FAZ 4	Die Explosion der Plastosphäre – *Müllberge im Meer wachsen*	explosion of the plastosphere		you can almost stand on the plastic litter in the ocean in some parts -> dimension; vermuellung der ozeane ist zum sinnbild der oekologischen instinktlosigkeit von -> igrnoranceueberflussgesellschaften geworden; meeresstrudel sind ein kurioses schauspiel zivilisatorischer dekadenz -> igrnorance	plastic on beach	planet will suffocate from longlasting plastic litter

			Step 2: Dimension						
			Problem					Solution	
			Where does the problem come from?What is the problem?	Why is it a problem?	Who is responsible?				
	Code	Articles	cause/origin	consequences	actor/responsibilities	indiv. humans part of problem?	H-N-L relations	type of action/solution	actors/responsibilities
1	SZ 1	Gefährliches Plastikmeer - *Verschmutzung der Ozeane*		great danger for animals, charismatic species; magnitude of problem			NL		
2	SZ 2	Plastikmüll treibt in ungeahnten Wassertiefen - *Warnung europäischer Forscher*	biggest danger: microplastic	long-term problem; ecologigal consequences			NL		
3	SZ 3	Müll über Bord - *Illegale Entsorgung*	handling of litter, additional fees for waste disposal in harbors -> economic incentive to litter; urgent problem; uncovering culprits & weak punishment	severe consequences for environment	politics failing to acknowledge problem & their responsibility	indirectly	problem: HL handling; consequences: NL	(EU) regulation & punishment, cost incentives against littering -> economic	EU/politics
4	SZ 4	Forscher warnen vor Ozean-Filtern - *Umweltschutz*	ongoing plastic production; rivers, disposal sites & ships are sources of litter	complex problem, no easy solution				technological solution: costly, doomed to fail; force politics & companies to minimize plastic consumption, EU regulation for plastic bags & recycling	politics, industry
5	SZ 6	Plastik unter Palmen - *Plastik im Ozean*	ecological consequences, unclarity of consequences, also dangerous for humans as part of food chain	Offen sind viele Fragen - die Folgen des Plastikbooms sind bislang kaum absehbar				Immerhin werde nun wieder über das Problem geredet -> attention of problem; Important to avoid more plastic entering ocean Solution: strong controls, better product designs & giving litter a new value	unclear
6	SZ 8	Kommt in die Tüte - *EU gegen Plastiktaschen*		deadly consequences of marine litter for animals	Average consumer knows/suspects that; EU takes responsibility -> Reduce consumption by consumers	allerwenigsten gelingt es offenbar, ständig eine Einkaufstasche bei sich zu tragen		Solution: industry/businesses have to deal with it or consumer has to pay more for bags; Cost-incentive; Awareness of litter problem; Solution: resposinsible behavior of consumers?	Example role of europe – responsibility?!; individuals
7	SZ 10	Mikroplastik - Umweltgefahr aus dem Drogeriemarkt	Technical problem: sewage filters; ecological consequences	genaue Dimension der Risiken und Gefahren ist noch unklar -> Uncertainty, danger & risks					Politics as powerful agent of change; Consumer responsibility: choice; Production – responsibility of industries
8	BILD 1	Plastik-Abfall gefährlicher als Klimawandel - *Die Welt versinkt im Müll*	Garbage mounts grow -> ocean= dump; Problem: plastic doesnt rot, longerm; increase in plastic production world wide; Illegal dumping	Deadly & agonizing consequences for animals; Food chain -> boomerang effect, humans affected	Human produces litter which turns to a problem			Beach clean up; Recycling of litter; Rethink use of plastic products -> use alternatives; Avoid plastic; Reuse & recycle	Everybody can do something
9	BILD 2	DAS landet irgendwann auch auf unserem Teller! - *Fast 270 000 Tonnen Plastikmüll schwimmen auf dem Meer*	Alarming: our oceans drowning in litter; Warning not taken seriously because of uncertain/lack of concrete numbers	Boomerang effect, poisonous substances; Plastic: unaestetic & potentially deadly; now it becomes dangerous for us humans -> consequences	Im Meer landet alles, was die Zivilisation wegwirft -> Civilization's litter			solution/hope: bacteria that digest plastic	
10	BILD 3	Teenager will ALLE Ozeane von Plastikmüll befreien – *Holländer Boyan Slat (19)*	Prevent environmental catastrophy					technological solution: costly, Gigantic project with potential	

			Step 2: Dimension						
			Problem					Solution	
			Where does the problem come from? What is the problem?	Why is it a problem?	Who is responsible?				
	Code	Articles	cause/origin	consequences	actor/responsibilities	indiv. humans part of problem?	H-N-L relations	type of action/solution	actors/responsibilities
11	WELT 3	Der Kampf gegen die weitere Vermüllung der Meere - *Schiffsverkehr*	illegal dumping; financial benefit of high garbage disposal fees in harbors	agonizing & unnecessary death for animals		we humans dispose litter in water bodies; shipping & fishing industry major pollutor			Politics would have regulatory force/power but doesnt use it
12	WELT 6	269.000 Tonnen Plastik gefährden die Meere – *Umwelt*	genaue Abschätzung dieses Problems ist schwierig -> uncertainty; ocean & coastal problem; Tiere fressen Müll – und sterben -> danger for environment	longterm problem	cities & industries pollute				
13	WELT 7	Wo irrwitzige Mengen an Plastikmüll verschwinden – *Meeresforschung*	controverse data concerning amount of litter in ocean; biological consequences	long-term problem				more research needed	
14	TAZ 1	Die Plastifizierung der Ozeane - *Zukunft*	grave ecological consequences for environment; Other risks: medication rests, pesticides & hormones -> Antibiotic resistances increase; economic growth focus of politics	grave ecological consequences for environment but also humans				avoiding plastic, fishing for litter	consumer, every individual has a choice
15	TAZ 3	Dem Müll auf der Spur – *Meereschutz*	source of litter: land-based, beach; Economic consequences for beach cleaning	Zivilisationsmüll zur schweren Bedrohung für die Meeresumwelt ; deadly consequences for environment	society's litter			create awareness to avoid litter	
16	TAZ 4	Die unsichtbare Gefahr - *Plastik rutscht durch*	Ineffective sewage treatment, microplastic, washing machines at home	ecological problem, deadly, Boomerang effect & Uncertain effects				Solution: ban of microplastics and plastic bags; More effective sewage treatment	
17	TAZ 7	Abfall reicht bis in die Arktis - Verschmutzung der Meere	ocean = garbage dump; far away places like arctic now polluted - plastic in deep sea; microplastic threat	ecological consequences; long-term					
18	TAZ 8	Wie Muscheln auf Sylt - Studie zu Plastikmüll im Meer	Improper waste managem	Alarming consequences for animals & humans	Assignment of guilt to asian countries as „biggest ocean polluters"; China large contributor, comparison to germany -> seems less of a problem			Experts don't expect improvement if population, plastic consumption & litter amounts increase, esp. In asia	
19	FAZ 3	Politpoker mit Plastik – *Wie Meeresmüll verhindern?*	threat for environment, uncertain consequences		germany as an example for the world -> responsibility; global politics; our generation	our generation		reduce consumption through EU regulation (plastic bags); develop new types of plastic; initiate recycling in asia	germany as an example for the world -> responsibility; global politics; our generation
20	FAZ 4	Die Explosion der Plastosphäre – *Müllberge im Meer wachsen*	dimension of gyres, uncertain amounts & consequences; future increase of plastic production threatens oceans		unregulated waste management in sout-east asia & china			recycling & WM in coastal countries (esp. with weak WM systems); industrial societies: avoid more plastic	

Appendix 5 – Summary of Frame Analysis

Marine Litter Problem and Solution Frames

	Frame	Short description	HNL relationships
Marine Litter Problem	**Plastic litter as a threat to the natural environment**	Plastic and litter are framed as dangerous to the environment; with a strong emphasis on affecting nature rather than humans.	nature-litter
	Ocean as a garbage dump	This frame demonstrates the magnitude of the problem in which the ocean serves as society's garbage dump. Nevertheless, the environmental pollution is stronger emphasized than the human contribution to it.	nature-litter
	Plasticization of the ocean	Similar to the previous frame, this one exaggerates the extent of the problem by displaying the ocean as becoming plasticized.	nature-litter
	Seemingly harmless but hazardous everyday items	This frame deals with the human use of (everyday) products and their conversion into hazardous litter.	human-litter
	(Apocalyptic tone)	Underlying most frames is an apocalyptic tone.	
Solutions to the Problem	**Preventing more litter from entering the ocean**	This dominant frame revolves around consumption and political power to regulate consumption (and thus litter production) and waste management patterns.	human-litter
	Care of the litter already present in the ocean	This less prominent frame presents the (un)feasible technological measures to clean the ocean from the litter.	human-nature-litter
	(Uncertainty of the problem and need for more research)	The scientific uncertainty of the problem as well as solution are apparent in most frames.	

Responsibility Frames

	Frame	Short description	HNL relationships

Responsibility for the Problem	**No mentioning of responsibility**	The absence of direct ascription of responsibility leaves the question of guilt or blame mostly unanswered.	
	Societal responsibility for civilization's litter	Society's obligation to take care of the litter they themselves have produced (through overconsumption and carelessness).	human-litter
Responsibility for the Solution	**Politics and politicians defined as powerful actors to tackle the problem**	Politics is seen as being capable and responsible of providing structures for improved consumption and waste management of other actors (e.g. consumers).	human-human human-litter
Citizen's Responsibility	**Individual as a consumer**	The emphasis is placed on the responsible consumption and litter production of the individual consumer.	human-litter