Intermedia Mobility in the Public Sphere

Framing Bikesharing in Mass Media and Social Media across Three Cultures

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Abstract

Accompanying developments in communication technologies and practices, new possibilities emerge for actors to participate in public debate on political issues. While the influence of traditional mass media on public opinion formation processes in the public sphere has been firmly established, the rise of digital media adds complexity to communication processes that are only beginning to be understood. This research aims to add to the understanding of how social media contributes to the normative goals of the public sphere.

Much of the research at the nexus of digital media and the public sphere focuses on extraordinary issues or events such as revolutions or electoral politics, leaving a gap as to how everyday political issues are discussed and debated in a hybrid media context. This research addresses that gap by examining a non-sensational policy issue – bikesharing – in two public sphere arenas. Quantitative and qualitative content analyses of print media and Twitter texts are applied to compare and contrast these two mediums across three cases. This comparative approach using the German, North American, and Spanish cases offers insight into the role of social media in different traditional media systems.

The findings indicate that while framing of the issue of bikesharing in print media is commonly reflected on Twitter, the reverse is seldom the case. Frame and issue spill-over from Twitter to print media was only found in the North American case, where the meaning of bikesharing represents the largest departure from the status-quo. Political and cultural contextual factors led print media frames to go unchallenged on Twitter in the Spanish case and the debate was channeled through a stronger political logic in the German case.

There was an observed preference for obtrusive issue attributes when legitimizing positions for or against bikesharing on Twitter, suggesting a bias for experience-based rationale on that medium. Social media does not have a unified effect on the legitimacy and efficacy of the public sphere, rather political and cultural factors influence the role of social media in public debate as well as the efficacy of social media to help impact political decisions.

For Mike

Acknowledgements

This project would never have gotten off the ground, the research never carried out, and the project certainly never concluded had it not been for the encouragement, inspiration, and reassurance of so many people I had the pleasure of encountering along the way, and indeed long before I even knew what a dissertation was. I am extremely lucky to have had so much support from so many different people, and for that I am deeply grateful.

Thanks goes to my first supervisor Andrea Römmele for giving me the room to work and think independently but also knowing when and how to ask the right questions to keep the research moving in the right direction. I am also grateful for the encouragement of my second advisor Barbara Pfetsch, whose colloquium provided a great space to gather input and sort ideas. I would also like to express thanks to Hans-Peter Meister, Henning Banthien, and Christian Klasen of IFOK, whose generosity enabled this research project.

I had a great office mate, and a great hallway crew too for smiles and solidarity. A great debt of gratitude goes to my fellow researchers and students whose curiosity and enthusiasm provided me with exchanges of the most important kind when stuck deep in a long research process, as well as the reassuring knowledge that there are other people like me out there, and that's all right.

Cheers Herr Ross, you saw that it was time for me to take this step, and you were right. I wouldn't be here without your specific encouragement to do specifically this. To the Radentscheiders, you all provided me with proof that the way we talk about our cities matters, which in turn confirmed that this project looks at arenas that shape the world we live in. Thanks also to the Ikarians, who always had something tasty and nutritious on the stove when I didn't make it to the store before it closed.

I could never find the words to express my profound appreciation for my family. I am forever in awe that they provide love and support in a way that makes me know it's ok if I can't find those words. Lastly, I would like to express deep gratitude to Angelica, who always believed in me, even when I didn't.

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The Abbreviations

ADFC	General German Bicycle Club
API	Application Programming Interface
ICLEI	Local Governments for Sustainability
KVB	Cologne Public Transport Operator
MAMIL	Middle Aged Man in Lycra
OJD	Office for the Substantiation of Dissemination
RT	Retweet
UTC	Coordinated Universal Time
VCD	Transport Club of Germany

1. Introduction

The public sphere is a concept used for talking about the spaces where interlocutors exchange ideas and seek to convince and understand others. Public sphere arenas are spaces – conceptual, virtual, imagined, or material – where these exchanges take place, influencing collective opinion formation. The public sphere as originally outline by Jürgen Habermas (1989) is not an empirical reality but a concept: a normative benchmark for the evaluation of communication arenas. It is influenced by a large number of factors including political systems, media environments, and cultural contexts.

How communication processes influence individual and collective thinking has long been the subject of inquiry. Debates on communication processes picked up steam in the mid-1900s, when scholars began systematically researching how political goals can be achieved through communication (Lazarsfeld, Berelson & Gaudet 1968), and technological developments caused observers to re-think approaches to mediated communication (McLuhan 1994). With landmark studies such as McCombs & Shaw's (1972) study on the power of newspapers to set the public agenda and a large body of subsequent literature, the important role of mass media for influencing public opinion was firmly established.

While traditional mass media maintain a strong influence on opinion formation, politics and political communication also happen in the realm of digital media; this adds another important dimension to the study of communication. This process of change is not new; as technological developments in communication have again and again revolutionized the role of communication in politics (Römmele & Pfetsch 2015). Digital media platforms, such as Twitter, have changed the way political deliberation and opinion formation happen, creating the potential for greater citizen participation in these discussions. Prior (2007) illustrated the impact of a "post-broadcast" system on democratic politics, identifying the choice of channels and mediums, and the lack of a common communicative input or common terms of reference as major factors leading to changes in the way politics happens. The boundaries between traditional and social media are permeable and blurry. Complex series of interactions transpire, with varied implications for different actors in what Chadwick (2013) has dubbed the Hybrid Media System.

Such constantly evolving communication technologies and practices present a moving target for up-to-date understanding of phenomena such as media's role in the public sphere, the policy process, and opinion formation related to political issues. Understanding how contemporary communication processes relate to public decision making is a complicated task due to the wide array of media actors, and the wide

array of mediums or media arenas and actors using social media. As media technologies and communication practices evolve, the nature of the public sphere and democratic processes are affected.

As communication technologies develop, new areas of research evolve to understand the changes in communication practices. Research thus far on the intersections between traditional media and social media in the hybrid media system has focused largely on exceptional political issues such as revolution and conflict (Castells 2012; Meraz & Papacharissi 2013), scandals (Qin 2015), or elections (Bimber 2014; Copeland & Römmele 2014; Hersh 2015), and most often take a single case approach with the bulk of research focusing on North America or Anglophone countries. Everyday political decision-making on non-sensational issues represent a research gap. Furthermore, comparative studies accounting for more than one geographic, cultural, or national focus remain limited.

This research aims to fill some of these research gaps. Specifically, this research provides an example of a routine political issue – bikesharing – as it is deliberated in traditional and social media. Furthermore, three case cultures are analyzed and compared, offering insight into the implications of different political and media systems. In addition to the North American case, which allows for a more direct comparison to previous work, the Spanish and German cases add comparative breadth to the existing literature.

1.1. The Structure of the Dissertation

This dissertation is structured as follows: the rest of this section provides an introduction to the background for this work including an introduction to the theory, case studies, and methods applied. In chapter two, the theoretical foundations of the public sphere for accommodating contemporary digital communication practices are developed. Chapter three expounds on the tensions between local, national, and international issues in localized and international public sphere arenas, and establishes bikesharing as a coherent and accessible local policy issue which is simultaneously occurring in many national and cultural contexts. In chapter four the relevance of transport policies as issues of political interest are discussed, followed by a description of the cultural contexts in which the bikesharing discourse is investigated. Chapter five addresses the relative positioning of the different types of communication media and how they relate to each other. The concept of framing used in this research is established in chapter six, before moving on to describe the methodology used in chapter seven. Chapter eight presents the results of the quantitative content analysis, and the results of the qualitative content analysis are described in chapter nine.

Chapter ten offers a different approach to the same task as was followed in the previous content analyses. There is an explicit reorientation of the ontological approach for the application of the discourse analytical approach applied to the same content as previously analyzed in order to assess legitimation of positions on bikesharing from a different angle. The discourse analysis of legitimation is then presented.

In chapter eleven, the findings of the research are explained and discussed as they relate and connect to the literature on the public sphere and deliberation in a digital age. Chapter twelve summarizes the main conclusions of this study. In addition, the broader implications of this research and the limitations of the study are addressed, closing with a reflection on the possibilities for further research.

1.2. The Theory: Traditional Media, Digital Media, and the Public Sphere

A basic assumption of this research is that communication and media matter for policy. Support for this assumption has been firmly established in the literature (Jones & Baumgartner 2005; Lakoff 2010; Wolfsfeld 2011; Wehling 2016). The public sphere is constantly evolving, and a recurring question is whether the developments bring it further from or closer to democratic ideal-type public sphere. This question is especially relevant in the context of technological developments that revolutionize the way that the communication and media work. Therefore, a further assumption for this research, is that digital media matter for policy. Based on this assumption, this research addresses the question of 'how' digital media influences public policy debates in a public sphere with hybrid arenas.

Since the dawn of the internet, online communication has been filled with expectations. Numerous scholars have focused on the promises and potential of the internet to improve democratic communication (Norris 2000; Papacharissi 2002; Bohman 2004; Papacharissi 2010; boyd 2011; Jenkins, Ford & Green 2013), while others stress that the internet is no more independent of existing power interests than other communication forms (Morozov 2011; Fuchs 2014b). The research in this study docks on to this debate, which is gaining nuance and has moved beyond pure skepticism or euphoria to focus on what aspects of democracy, participation, and communication are affected in the public sphere and how.

Specific aspects of digital communication have been examined ranging from generalized political and civic participation on the internet (Park & Perry 2008; Rainie *et al.* 2012; Boulianne 2015; Theocharis 2015) to extraordinary events such as election campaign communication on social media (Bruns & Burgess 2011; Gibson 2013; Copeland & Römmele 2014; Baishya 2015; Römmele & von Schneidemesser 2016), or conflict and revolution connected with social media (Lotan *et al.* 2011; Wilson & Dunn 2011; Castells 2012;

Meraz & Papacharissi 2013). Non-sensational, ordinary, and local politics in the public sphere in the digital age have thus far received little attention by the research community. This gap in the literature is where this research fits in: public debate on routine political issues in a hybrid media environment.

Traditionally, issues addressed in media discourse have gone through the filter of news industry selection, in which choices are made regarding which issues to present and how to present them (McCombs & Shaw 1972; Fowler 1991; Antilla 2005). Because choices such as these are made, impartial journalism is not the reality (Hintz 2009). Politicians and media are the two main actors involved in creating and communicating political information as news via the mass media (Pfetsch 2004). The media actors are often situated in close proximity to the political elite, suggesting a great potential for politicization and instrumentalization of the media and a convergence of interests (Hallin & Mancini 2004; Esmark 2014). Further, many media actors have intertwined interests with the nation state and the political establishment as a whole, as the nation provides the context necessary for the mass media to operate their organizations (Sparks 2005). The political communication elite (politicians and journalists) occupy a position of great influence as gatekeepers to the political public sphere. Social media represents a potential to undercut the exclusive access and influence of these elite actors in shaping the discourse and opening it up to influence from new or formerly excluded ideas and types of knowledge.

Cultural and political factors shape the way a media system is formed (Hallin & Mancini 2004, eds. Hallin & Mancini 2012), offering differentiated access to various actors. The exclusivity of access, traditionally under the control of elites, may be in jeopardy as a result of the internet and Web 2.0 capabilities which can, in theory, remove many of the barriers to entry for active citizen participation in the public sphere. This could change the power dynamics in the media and the public sphere, with a potential to increase the amount and quality of public participation in news creation. This also has considerable potential to affect the state of democracy (and democracies) worldwide, effectually flattening the hierarchy of the media landscape. Naturally, this phenomenon will not occur uniformly everywhere, and varying degrees of change dependent on political and cultural contexts are to be expected.

The use of social media by citizens to actively participate in political debates occurring in the public sphere is likely to be affected by many of the indicators used by Hallin and Mancini (2004) to identify models of media and politics. Some of their indicators are politicization of the media as a relevant process, alongside others such as pluralism, instrumentalization, professionalism of journalism, the position of the media industry vis-à-vis the state, and media consumption patterns. The alignment of these and other factors, such as cultural values related to the role of the individual in democratic politics, will shape the way in

which social media is used. Citizens and other actors can use social media to challenge the status quo by identifying problems not addressed by mass media or suggesting alternative solutions, or they can reproduce and support the status quo by voicing approval or legitimizing ideas and action.

The legacy of social media is still in the making, and the discussion is far from over. This research adds to that discussion by way of evaluating the differences in use of social media across media systems by contrasting the discourses in mass media and social media surrounding a process of change.

1.3. The Cases and Constants

This section briefly describes the constant and the variables in this research. This research follows one common policy issue and operates on two major variable vectors. The local policy issue, bikesharing, is described directly below. The two variable vectors are communication mediums and case cultures. The communication mediums are print media and Twitter. The case cultures are the German, Spanish, and North American cultures.

1.3.1. The Example Discourse: Bikesharing - A Local Policy Issue

Many important policy issues and repercussions of policy are not directly related to the everyday experience of citizens: they are non-obtrusive (Zucker 1978; Walgrave & van Aelst 2006). It is difficult to put one's finger on the results of climate policy, or to connect the existence of the business on the corner to national fiscal or monetary policy. In many of these cases, we can apply Niklas Luhmann's famous quote "Whatever we know about our society, or indeed about the world in which we live, we know through the mass media" (Luhmann 2000:1). This is true for many areas of our lives, and for the others, what we know through the mass media affects the way in which we encounter reality. This research pursues the goal of exploring communication about an issue that can be encountered and experienced by anyone, including without mediation through communication mediums, that is to say, obtrusive issues. Thus the policy issue chosen is one that can be materially encountered as a result of its implementation. When bikesharing programs are implemented, citizens can literally touch the material representation of the policy, whether they support it, oppose it, or were aware of it at all before the encounter.

1.3.1.1. The Relevance of Mobility Policies

Mobility is a central aspect of citizens' abilities to pursue their goals and participate actively in society. The way in which citizens meet their mobility demands is undergoing a change; prompted by concerns about the environment and depletion of fossil fuels, health concerns, and economic considerations, citizens are beginning to change how they move about their cities and towns. Popular carsharing and

bikesharing programs, creation of more pedestrian zones, and a new emphasis on public transit are all indicative of movement from the automobile-centered city to different organizational forms. The strong influence of the automotive industry, infrastructure path dependencies, and preferences for the familiar however, anchor this process of change and the attached discourse in the status quo (Dennis & Urry 2009).

For the purposes of this research, an examination of this process of change exemplified by bikesharing provides a promising case. The Earth Policy Institute published data in 2013 indicating that there were 535 active bikeshare programs worldwide, exploding from only six in the year 2000 (Larsen 2013). Four years later, as of July 2017, the reported number of cities with bikesharing programs more than doubled to 1,300 (Meddin & DeMaio 2017).

This explosion of bikesharing, however, is not an organic process. It is necessarily a policy issue. Bikesharing necessitates significant political commitment (OBIS 2011; ITDP 2013; Schroeder 2014), including processes of agenda-setting and issue framing for creation of political will or opposition. Even in the rare cases of guerilla bikeshare programs, the municipal politicians or officials are forced to take a position on the development. Political communication is a critical part of the process of conceptualizing and implementing bikeshare schemes (OBIS 2011; Shaheen, Guzman & Zhang 2012; ITDP 2013).

The responsibility for policy governing bikesharing is the purview of local governments. In this way, the distance from the citizen to the policy is less than if the policy issue examined were handled at the national or even regional level. Because of its obtrusive, graspable nature, there is no expert knowledge or policy expertise required to take part in a policy related debate if it is not explicitly thought of as a policy debate. Abstract concepts are necessarily framed in terms of that which is possible to experience first-hand (Wehling 2016). As opposed to the impacts of many policy issues, the impact of policies on bikesharing are quite directly accessible. The issue was chosen in this study in particular because it is a policy related issue that has as few barriers, real or perceived, to partaking in the public debate around the issue.

This research explores local policy debates in two arenas of the public sphere and how they are connected. The goal of this research is to analyze how social media is used and to what extent traditional media frames determine frames used in social media discourses. This analysis is carried out using the example of public discussions on bikesharing.

1.3.1.2. The Link to Policy

Media matter for policy. This has been established time and time again (McCombs & Shaw 1972; Hilgartner & Bosk 1988; Jones & Baumgartner 2005; Blumler 2014; Pfetsch 2014). In the hybrid media context, social media also matter for policy (Chadwick 2013; Nielsen 2015). For analyzing how the issue of bikesharing is discussed on the different mediums, this study looks at which issues are connected to bikesharing in order to legitimize support or opposition to bikesharing. In other words, this study looks at how the issue is framed. Legitimizing policy is an important aspect of practicing governance. Thus, policy legitimacy can be conceived of as the widespread perception of a policy measure as being "appropriate, proper, and just" (Tyler 2006:375).

One way to determine whether a policy measure is accepted as legitimate is to look at the public debate revolving around that issue. Because there will rarely be unanimous agreement that a policy is legitimate (May, Peter J. & Jochim, Ashley E. 2013), numerous strategies for establishing or abolishing legitimacy will often be found in the public debate; media effects concepts concern themselves with these. Analyzing and comparing the framing of bikesharing in print media and digital social media provides insight into how the legitimation of policy within the two mediums affects each other.

While bikesharing is often understood as a sub-issue in the area of mobility or transport policy, it can have implications well beyond. As governments are increasingly exposed to pressures from external actors, issue publics and advocates apply communication strategies that cut across governmental sectors. Due to processes of policy integration, we can expect the issue to be framed as being relevant for other policy areas as well, both by policy makers and the public (Banister 2008; Stead 2008; Schwedes 2011). In this way, the issue of bikesharing can be used as a communicative object by a wide variety of actors, including those who do not have a direct interest in transport policy. The policy spectrum is limited to what is deemed appropriate in the eyes of public opinion, the public sphere, a major arena where public opinion is built, maintains significant relevance as a site for policy legitimation.

1.3.2. The Case Cultures

The case cultures serve as context variables in this research. The German, North American, and Spanish case cultures were selected based on numerous criteria. Firstly, they are all western democracies where public deliberation and communication are important to governance processes. Next, print media are ubiquitous in each case culture, and serve as important sources of political information. Further, social media are widely used and play prominent roles in the political communication practices in each culture (Barbera 2015). Fourth, the cases also each have a clear dominant language used in both Twitter and print

media (Mocanu *et al.* 2013). Fifth, bikesharing has experienced intense growth in all three of these cases in the past decade, causing the issue to be oft-featured in local public debates. Due to the recent development of bikesharing, actors looking to legitimize policy in favor of it will be regarded as challenges to the status-quo in all three cases. Cycling in general is marginalized as a policy concern in all of the cases (Oosterhuis 2014; ed. Cox 2015; Longhurst 2015; eds. Oldenziel*, et al.* 2016; Oosterhuis 2016).

While maintaining these key similarities which enable a fruitful comparison, there are significant differences: They are all three examples of different media systems as found in western democracies (Hallin & Mancini 2004). Newspaper readership is highest in the German case, followed by the North American case, and then the Spanish case, while Twitter use is lowest in the German case, and highest in the North American case (Hallin & Mancini 2004; Mocanu *et al.* 2013). Further, the meaning of cycling and thus bikesharing in the three case cultures is different. Briefly, in the German case the cultural meaning of cycling includes utilitarian mobility; in the Spanish case, the meaning of the bicycle is that of sport (Kettner-Høeberg & López 2015), while in the North American case the bicycle is seen as a children's toy. Cycling as a social practice is normalized only in Germany (and also there it has lost status in the transport hierarchy) (Ebert 2010). In the other two cases it is a marginalized practice. It is important to note, however, that the degree to which bikesharing is a departure from the status-quo is different in each of the three cases due in part to the different mobility cultures.

1.4. The Mediums

The two mediums, print media and Twitter, were selected because they are both important communication mediums in all three case cultures. For generalizability, the print media represent traditional mass media and typical media consumption practices. Twitter represents online, digital social media networks that have become ubiquitous and offer a challenge or alternative to traditional media. Further, the selection of Twitter was also made due to its explicit publicness (Murthy 2013). While other large social media networks like Facebook are also the sites of political communication and interaction, the functioning is different. On Twitter, following does not have to be a reciprocal act, while on Facebook, users must agree to follow each other in order to access much of their content. Thus, the more public orientation of Twitter makes it a better choice for studying communication in the public sphere.

1.5. The Research Question and Research Relevance

There is a long history of literature establishing the influence of traditional mass media on the public sphere (McCombs & Shaw 1972; McLuhan 1994; Bennett & Iyengar 2008; McCombs 2014). There is a gap

in the literature for addressing the influence and interaction of media effects between traditional media and social media, specifically framing, as relates to local policy and routine political issues. This is yet a relatively new area, and while digital and social media have received much attention, systematic and comparative studies between the two are only now beginning to be published. Matthes (2009) analyzed the study of framing concepts in major communication journals for the period from 1990-2005, in which no mention of social media was found.

Since then, there have been numerous studies that address the social media and mass media nexus. Harder, Paulussen & van Aelst (2016) addressed this area, finding that in election times the political and media elite have massively more influence on social and mass media output than ordinary citizens. In their study, they note that this is likely different in political routine periods, calling for further research in this area (Harder *et al.* 2016:10). A comparison of print media and Twitter regarding the framing of Edward Snowden was carried out by Qin (2015), finding that the framing differed significantly. This was also an extraordinary and sensational case. Further, Qin (2015) explicitly notes that the question of the difference between frames on social and traditional media is yet seldom studied.

In a recent chapter on media, stakeholders and politics regarding urban planning, Aldred (2016) notes that the literature on the public debate on transport issues and the media is thin. She further acknowledges that what little literature there is on the subject focuses on traditional print media, and neglects digital and social media (Aldred 2016).

The theoretical background described above leads to the following overarching general research question:

- How does social media affect the public sphere as regards its normative goals?

Fraser (2007) has identified two main vectors for assessing the public sphere in terms of its conceptual normative standards: the legitimacy and efficacy vectors. This research speaks to both, but the greater focus is on the efficacy vector, assessing the ability of public spheres for contributing to democratic goals. An important way of influencing public opinion and thereby having an impact on politics is controlling the framing of issues in mediums with the largest potential for influencing public opinion to gain sympathy on a broad scale (Wolfsfeld 2011). These mediums remain traditional media organizations. For the present cases, this means that if frames are transferred from social to mass media, social media demonstrate the capacity for efficacy of the public sphere to influence policy. This is known as 'spill-over' (Pfetsch, Adam & Bennett 2013). To capture this, it is important to understand under what circumstances spill-over happens.

Thus, specific research questions are:

- In what ways do the framing of bikesharing in print media and on Twitter differ?
    - How does this differ depending on cultural context?
    - Under what circumstances do frames spill over from one Twitter to print media?

The above is the major thrust of this research. If spill-over occurs, then social media may have the capacity for efficacy in influencing local policy. This leaves open the legitimacy aspect of the normative assessment of the public sphere, and leads us to a secondary research question:

    - Who takes part in the public debates on bikesharing?

If citizens and civil society make up the largest part of the interlocutors of these debates, then the public sphere is closer to achieving its normative goals along the legitimacy vector. If businesses and governments dominate the public debate, then the public sphere is further from legitimacy.

1.6. The Method

This section briefly explains the dissertation's research design and approach. The unit of analysis is the text, meaning either a print media article or a Twitter post (also called a tweet).

The empirical analysis in this research is based on both qualitative and quantitative research. The qualitative aspects sandwich in the quantitative analysis. This research is both exploratory and analytical. While the discussion will propose explanations for the findings of the analyses, there is no intention to identify causal mechanisms. The international and inter-cultural comparison that results serves to add scale and generalizability, but this remains somewhat restricted due to the unavoidable culturally specific meanings of the issue examined.

The analysis of the framing and legitimation of bikesharing is carried out in a three step content analysis, followed by a discourse analytically-oriented examination of legitimation of bikesharing in print media texts and on Twitter texts. The print media texts are compiled from databases and the Twitter posts were harvested and archived using Twitter's stream application programming interface (API). This step immediately narrows the population of the content studied as only text items with the presence of the concept of bikesharing make up the population. The first step of the content analysis (inductive) is open coding on a pilot sample of tweets and articles stemming from an eleven day timeframe at the beginning of October 2014, directly before the collection of texts for the main corpus began. The second step is the (deductive) quantitative content analysis, coding each text item (print media text or tweet) with the codes

derived from the open coding. This step analyzes four of the five indices for analyzing favorableness and unfavorableness through content analysis: (un)favorable characteristics, presence of a concept, the frequency of occurrence, and the frequency of co-occurrence of two or more considerations (Krippendorff 2013). The third step is a qualitative analysis of the content, informed by the quantitative analysis. Figure 0 provides a rough sketch of the steps taken in this research.
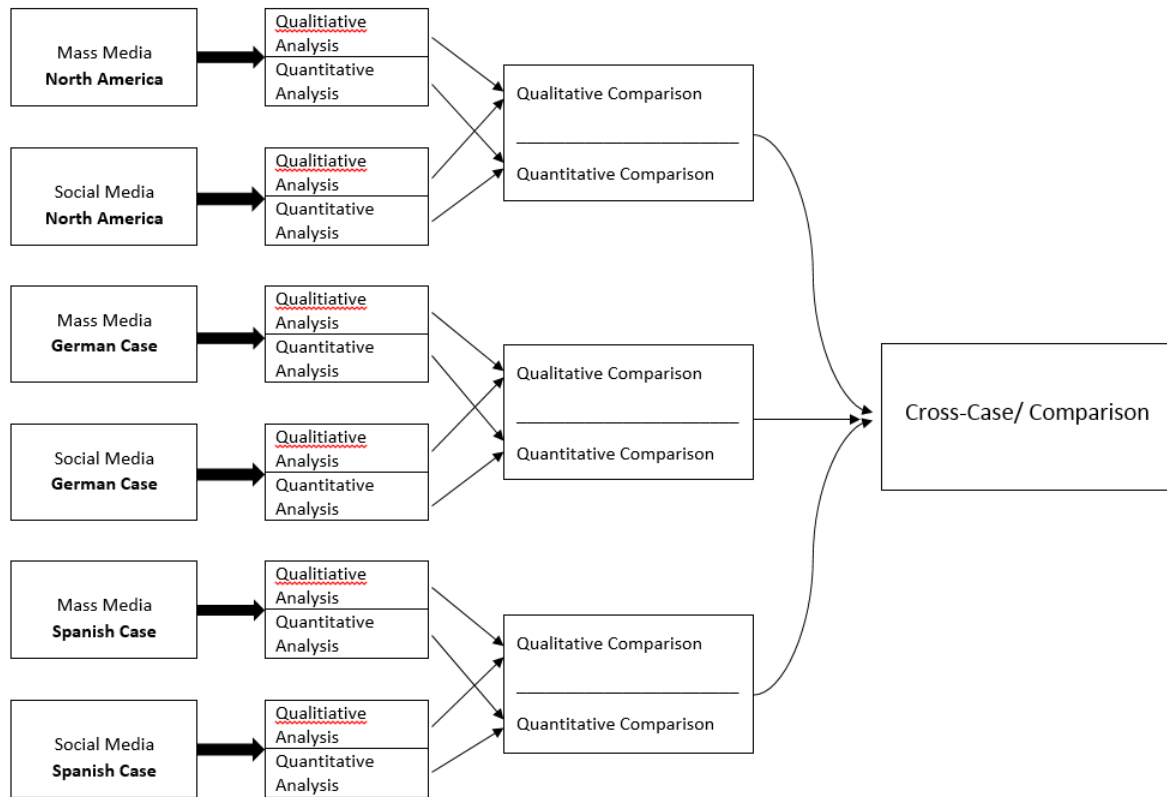
Figure 0 - Research Procedure

2. Media and the Public Sphere

This section establishes legitimacy and efficacy as key elements for the normative concept of the public sphere. First, these concepts are re-established for their relevance in a globalizing context and digitalizing media landscape. Then the roles of social media and traditional media are grounded in their relevance for the public sphere. Finally, local politics and local public spheres are theoretically embedded in the contexts of globalization and digitalization of communication practices.

The public sphere is not an empirical reality, but rather a concept which can help with the assessment of empirically observable conditions. The concept of the public sphere has been iterated and reiterated. "By the 'public sphere' we mean first of all a realm of our social life in which something approaching public opinion can be formed. Access is guaranteed to all citizens. A portion of the public sphere comes into being in every conversation in which private individuals assemble to form a public body. They then behave neither like business or professional people transacting private affairs, not like members of a constitutional order subject to the legal constraints of a state bureaucracy." (Habermas 1964/1974:49) Changes in the infrastructure of the public sphere affect the structure and orientation of the public sphere as regards what abilities are required for participation and what types of actors benefit most.

In terms of infrastructure, mediums of communication evolve along with technological developments. This impacts the structure of the public sphere in that different interests have more or less dominance, as with the case of advertising asserting itself in new mediums as these evolve and become more relevant (Habermas 1992:436). The tandem of advertising's symbiotic relationship with media result in a highly dominant element of media power which plays a significant role in the structure of the mediated public sphere.

Focusing in on the aspect of media power in the public sphere, Habermas differentiates between two communicative processes in the public sphere: the discursive-argumentative, in which rational decisions for collective action are pursued; and the "extractive intrusions" (Habermas 1992:437) in which one group views the other as clients (this can be as consumers, voters, etc.). Thus, while two strands are recognized, extractive intrusions encroach on, or parasitic to discursive-argumentative activity. This perspective clarifies the relationships of interlocutors, and fits together with critical approaches to social media, for example that of Fuchs (2014b), which we will return to later.

The public sphere is quintessentially linked to concepts of deliberative democracy (Fishkin 2009). The problem with this is that once it is linked to democracy, it is necessarily bounded to the democratic container, namely the nation state. However, Habermas says that "This is why "political public sphere" is appropriate as the quintessential concept denoting all those conditions of communication under which there can come into being a discursive formation of opinion and will on the part of a public composed of the citizens of a state." (Habermas 1992:446) He goes on to assert that precisely for this reason, the political public sphere is "suitable as the fundamental concept of a theory of democracy whose intent is normative." (Habermas 1992:446)

But what happens when the structure of the state is less tied with the structure of the public sphere? With contemporary media, including internet-based social media, publics are not necessarily composed of citizens of *the same* state. Thus, that which results from their discursive interactions does not articulate anything akin to the public opinion of a national public (Fraser 2007:16). Due to the interdependence of countries and the international aspect of some of the problems identified by super-national publics, the legitimacy of the desire to participate in the public sphere of a nation of which one claims no citizenship is undeniable. By springing the boarders of national publics, as communication mediums, border-crossing issues, and hypermobility of people, ideas, and property have done in some ways, the borders of national public spheres have also been sprung. So the normative basis upon which we lay claim to the importance of the public sphere must be adapted for use in global-digital media contexts.

This is certainly significant for media institutions, as national publics formed the basis upon which broadcast and print media exist and came to thrive. However, new media companies have emerged to provide mediums which disregard the nation in terms of their basic structure. Deliberations thus, even if local in scope at face value, can be understood as relevant to anyone with access to the deliberation and often also contributed to by anyone. Still, little is known about how these trans-border digital platforms affect public spheres still rooted strongly in many ways in the westphalian world order.

2.1. Civil Society & the Public Sphere

Mary Kaldor (2003) links the concept of the public sphere to civil society, positing that civil society acts through the public sphere in the constant renegotiation of social contracts between citizens and "the political and economic centres of power are negotiated and reproduced." (Kaldor 2003:44) Norbert Elias (1994) suggested that as a part of his notion of civilization, violence amongst individuals was removed. In

the vacuum left by the absence of violent coercion, non-violent ways of interaction are the interactions that remain, which also applies to decision-making processes. As Elias (1994) has set the foundation then, "a civil society was synonymous with polite society, a society in which strangers act in a civilized way toward each other, treating each other with mutual respect, tolerance and confidence, a society in which rational debate and discussion becomes possible." (Kaldor 2003:17) The removal of coercion from social decision-making lays the foundations for a public sphere. The public sphere is not caused by the emergence of civil society, but civility, in the sense of non-violent interactions, is a necessary condition for the emergence of the public sphere.

Kaldor claims that civil society is that which acts against the tendency of ideologies (be they capitalist or communist or other) to colonize the life-world, to use Habermasian terms (Kaldor 2003:27). While Adam Smith thought that interactions or public discourse can lead to the enactment of democracy, a Habermasian approach recognizes the dangers of individual's interests being corrupted by a colonized life-world, thereby distorting the true interests of the individual. Nonetheless, for both of these, some sort of organized and expressed versions of interests, on a collective level was necessary: a discursive political society. This entity applies itself to the organization of society and the distribution of society's resources in the form of pubic goods.

Desai (2003) provides us with a framework for the provision of public goods, which is enacted through three main areas of action: preference revelation, political bargaining, and production. Since public debates often have elements of public goods provision, this framework can be useful for locating the activities of the public sphere in the broader processes of societal organization. Related to debates about bikesharing, preference revelation is empirically observable in the content of this study. Preference revelation can be observed when debates about space usage come up, where to put a bikeshare dock, or how much public funding should be provided for providing the public good of air quality by reducing motorized transport, for example. This type of negotiation consumes a major part of the public sphere. Both mass media and social media are used to assert preferences with the goal of influencing the ensuing political bargaining, and sometimes the production processes. The realms of political bargaining and production would be excluded from public sphere activities in a strictly normative sense. However, we also observe that actors pursuing these interests also are active in the content analyzed here. Allowing for this reality in most cases, "we have learned from the theory of public choice and new political economy as well as from bitter political experience that the provision of public goods does not take place in a

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neutral, politics-free public space" (Desai 2003:65). The discussion about public goods provision, i.e. preference revelation, similarly does not take place in a neutral, power-free arena. The normative ideal of the public sphere is not an empirical reality but a benchmark on a measurement scale. Preference revelation and political bargaining are both rolled up into the arena that would be a public sphere. The analysis offered here, is empirical evidence that the communication arenas studied differ significantly from the normative standards of the public sphere, and provides insight into how the deviations are manifested.

Klaus Eder (2009) takes the position that discursive political society always has the potential to exist, as there will always be a public to watch the staging of civil society interactions, which he says are scripted according to the dynamic belief structures of the public. Eder puts civil society actors in the context of an environment populated with other actors (not exclusively civil society actors) with whom they interact. The awareness that the civil society actors have that others are paying attention leads them to perform, as it were, games on a public stage. This approach reflects that of Scharpf (1997) in the assumption that actors behave according not to objective reality, but to that which they have come to (subjectively) believe is the reality that they are facing. Thus, the staging of (also discursive) action, which for Eder is when civil society actors actually come into being, is based on and constrained by the "*subjectively defined interests and valuations* and their *normative convictions* of how it is right or good or appropriate to act under the circumstances" (Scharpf 1997:19) as perceived by the actors themselves.

Taking this to a practical level, we can identify the stage upon which these actors play out their script as including social media; Twitter for example. This medium (unlike many other social media), is available for the public of observers, if they so choose, without necessarily playing any role other than observer. What's more, the part of the stage that is Twitter is necessarily documented. Actors can thus perform (interact), and keep records of the play for later access.

2.1.1. Structure: Citizenship, Participation, and the Public Sphere

What actors are allowed access to the public sphere in theory? Why can one participate in the public sphere? O'Byrne (2003) answers these questions in his concept of citizenship. For O'Bryne, citizenship goes beyond institutional recognition of membership to an official group; feelings of membership and acceptance by other members as a member of the group or society are both equally important aspects of citizenship. Citizenship is thus both positive and negative, or active and passive. Participation in politics is

thus a condition of citizenship, "at least in the sense of being aware." And this in turn necessarily "involves access to, and participation in, the public sphere" (O'Byrne 2003:5).

Notions of citizenship are not limited to those traditionally invoking membership exclusively in groups formed by the nation state. Ideas of cosmopolitanism (Orosco 2003), world citizenship or non-modern citizenship (O'Byrne 2003) demonstrate that conceptions of citizenship need not be tied to those of national belonging, or even certain democratic institutions, such as national or even supranational legislative instances (O'Byrne 2003). Furthermore, citizenship is no longer a clear concept. The benefits and weaknesses of citizenship status can differentially be applied to those who represent different stages of characteristics deemed desirable or undesirable to the state (Ong 2006). Therefore, contributions or participation in discursive struggles within the public sphere even at the local level is subject to inclusion of individuals from beyond the locality whose organization is the subject of debate. This porous notion of the public sphere, which allows anyone whose voice can be projected into any given debate, no matter how localized, illustrates how the public sphere is a concept that is at once global *and* local. Arguments made in public spheres *may* but *need not* address specific institutions with a clearly institutionalized and demarcated jurisdiction. Using tools which enable instantaneous global communication thus magnify the porousness of public spheres.

2.1.2. Alternative Conceptions of Citizenship Impacting the Structure of the Public Sphere

So who is addressed in the public sphere? The total sovereignty of the nation state cannot be assumed in today's context. Thus, there are issues raised and demands made, formulated by the public through deliberations in public spheres, where the appropriate addressee is not the nation state. Decisions affecting the organization of social life are taken at supranational-level instances like the EU, the UN, Mercosur, or others. Multinational corporations' actions affect the lives of those whose governments are ineffective in the regulation of those activities. If the public wishes to participate in the determination of social life, then, there are non-state actors to whom appeals or demands will be addressed. This is especially the case when the capacity to take decisions to regulate or support certain processes does not lie with the nation state. This is the case with certain public-private partnerships, for example for the provision of local services like bikesharing. Therefore, Habermas' (1989) classic concept of the public sphere, which assumes that the regulatory capacity and ability belong to the state, must be rethought. An amendment can be found in Castells' four crises of national governance functions: crises of efficiency, legitimacy, identity, and equity (Castells 2008). Taken together, these four crises imply that nations cannot

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sufficiently regulate problems nor retain a mandate to do so, due in part to their inability to provide equitable well-being while upholding cultural values and idiosyncrasies (seeCastells 2008for more). To expand on this, it is worth quoting Fraser (2007) at length, as she thoroughly illustrates the demands we place upon public sphere theory if it is to be useful for our purposes in a contemporary investigation:

> "The 'who' of communication, previously theorized as a Westphalian-national citizenry, is often now a collection of dispersed interlocutors, who do not constitute a demos. The 'what' of communication, previously theorized as a Westphalian-national interest rooted in a Westphalian-national economy, now stretches across vast reaches of the globe, in a transnational community of risk, which is not however reflected in concomitantly expansive solidarities and identities. The 'where' of communication, once theorized as the Westphalian-national territory, is now deterritorialized cyberspace. The 'how' of communication, once theorized as Westphalian-national print media, now encompasses a vast translinguistic nexus of disjoint and overlapping visual cultures. Finally, the addressee of communication, once theorized as a sovereign territorial state, which should be made answerable to public opinion, is now an amorphous mix of public and private transnational powers that is neither easily identifiable nor rendered accountable." (Fraser 2007:19)

The state is therefore not always the addressee of public opinion generated via deliberation in public spheres, and thus we must search for a new authority or authorities. Castells (2008) makes the claim that the eroded sovereignty of the state directly results in an international public sphere, which fills the vacuum (Castells 2008:80). This then also has implications for the determination of inclusion and participation in the public sphere. If it is not the state, with powers to issue citizenship and thereby call into existence a contract between citizen and state, then it can similarly no longer be the citizen in a formal or institutional sense which defines participation in the public sphere, and the public sphere cannot continue to solely address the nation-state.

Individuals, citizens and non-citizens, are increasingly mobile, and do not always behave as though political boundaries are in fact geographic boundaries. Consider the global business elite, or the influx of individuals from North Africa, the Balkans, and the Middle East into Europe in 2015. It would lack normative legitimacy to deny these individuals access to the public sphere simply due to lack of formal citizenship. Moreover, it would lack empirical validity to suggest that they are not parts of public spheres where they have no claim to formal citizenship. One need only think about protest or awareness actions carried out by those lacking citizenship, feeding debates over whether to extend formal citizenship to certain groups of migrants or unrecognized or undocumented persons. The slogan "undocumented and unafraid" (see undocumentedandunafraid.com) is an example of exactly this phenomena which spurred

significant and ongoing deliberations and impacted the political agenda. The action which focused public attention on the issue was carried out mainly by those lacking formal citizenship. On the other hand, individuals can reap rewards traditionally associated with citizenship by achieving certain capacities. Thus, "entrepreneurial expatriates," or others deemed desirable by local, national, or regional power brokers can be extended favorable treatment (also institutionally), while migrants or even formal citizens with less means to harness say, productive capacities within the knowledge economy, can be disadvantaged (Ong 2006:500).

2.1.3. The All Affected Principle as the basis for Public Sphere Participation

Nancy Fraser (2007) addresses the conceptual problem of the participatory structure of the public sphere by applying the *all affected principle*. This works towards ensuring legitimacy of the public sphere by asserting that it is no longer formal citizenship that gives individuals the right to make deliberative contributions to public spheres, but rather this entitlement comes from the idea that if an individual is affected by a process, they have the right to voice an opinion about it, contributing to the formation of public opinion. This response is a sufficient normative prescription for fulfilling the inclusiveness condition for the structure of the public sphere, as it ensures that all those with a stake in a social issue may contribute. The second aspect of the legitimacy vector of the public sphere is participatory parity, implying that "all interlocutors must, in principle, enjoy roughly equal chances to state their views, place issues on the agenda, question the tacit and explicit assumptions of others, switch levels as needed and generally receive a fair hearing." (Fraser 2007:20)

It becomes clear, then, that the legitimacy of the public sphere hinges on inclusion and participation, and that formal citizenship is not a sufficient concept for ensuring legitimacy. This research assumes the all affected principle as a normative benchmark, and seeks to interrogate the participatory parity aspect. In the present case, the structure of the potential public sphere afforded by online interaction is under scrutiny. Thus, internationally operating corporate social media must be interrogated as to the extent to which they offer inclusion to all and any interlocutors. However, formal access, which may be regarded as the creation of a profile and internet access is not sufficient to deem these mediums inclusive. It must also be evaluated the extent to which perspectives and arguments put into these arenas can affect or contribute to traditional media portrayal of local issues.

If the undermining of the nationally-relevant public sphere results in international or transnational public spheres (Fraser 2007; Castells 2008), these must be conceived of not as existing in isolation above what were national public spheres, and dedicated solely to issues of global or international relevance. It does not follow that these public spheres, just because they can be international, exclude national or subnational discourses. Rather, the implication is that they are international in the sense of being open to an international participation regardless of the scope or location of the issue.

A further crucial aspect of the public sphere as identified by Fraser (2007) is political efficacy. We can immediately see that the efficacy of the public sphere for in impacting politics can partially be channeled through the practice of voting, and as voting is often contingent on formal citizenship, efficacy is also called into question. Nonetheless, it is empirically evident that non-citizens of a polity can certainly have significant effect on the political process. The campaign 'Kony 2012' (invisiblechildren.com), Barack Obama speaking in Berlin as a candidate for president of the USA, or the activities of WikiLeaks exemplify this, demonstrating that political processes can certainly be affected from formal 'outsiders.'

2.2. Media and the Public Sphere

It has been established that traditional mass media organizations take an important role on in the formation of public opinion (McCombs & Shaw 1972; McLeod & Reeves 1980; Luhmann 2000; Hjarvard 2008; Hintz 2009; Blumler 2014; McCombs 2014; Strömbäck & Esser 2014). In other words, traditional media institutions not only create but also dominate influential public sphere arenas, and thus affect politics. The way this plays out, however, is not consistent. Hallin & Mancini (2004) have described at length three different ideal types of media systems found in western democracies, outlining how interactions between media and politics are structured in western countries. Differences in democratic patterns and structures also affect how public debate is integrated into political outcomes (Lijphart 2012). As the nation-state is the major political unit where power is concentrated in western democracies, it has also emerged as the addressee of the public sphere.

Communication has been crucial to the concept of the nation-state since its inception, as the concept of the nation-state is an idea which has to be communicated to lay any claim to existence. Language has often been attributed a central role in the formation of nations. Anderson (1991) couples the emergence of linguistic publics and national publics with the advent of print capitalism. This notion firmly links communication, language, and the nation-state, rooting the evolution of media institutions in the

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national. Nations, however, are not "communities, sharing values and interests." (Castells 2009:14) The values and interests they would seem to display according to a realist reading of politics are actually temporary accords or hegemonic moments of those values, but they continue to be contested and thus are constantly in evolution. An understanding of the values that led to the media and communication contexts observable in the three national media systems examined in this study is helpful in order to differentiate between the various roles that media and communication play in the respective cultures.

This section outlines how the local public sphere with all of its idiosyncrasies is nonetheless directly embedded in an overarching global public sphere and how these various levels exist and interact. It goes on to address the status quo of public spheres dominated by traditional mass media, and then expands on why social media may represent a way to address this malady.

2.2.1. The Local is embedded in the Global

Starting from the broadest possible setting, there are global trends and discourses that influence national and local contexts. Following Beck (2005), the implications of globalization are not a clustering of power at global levels, but rather that a conceptualization is required which acknowledges direct interactions and alignments between all levels of social organization. Processes of globalization or trans-nationalization do not inherently focus on the broadest possible level, but rather endow any and all actors with potential agency and power which can then be directed towards any other actor.

While the interpretation of these global issues will differ from culture to culture, we must acknowledge the relevance of globally prominent discourses on the local identities. The global rise in prominence of environmental discourses has certainly permeated all three of the case cultures, in which environmental concerns have featured prominently in political discourses at all levels. Global flows are important for considering local contexts, because conceiving of these in strict separation does not reflect contemporary realities. Cities and neighborhoods continue to be strongly rooted in the traditions of local culture, but are also linked and exposed directly to dynamics of a global scale.

Local cultures and identities must be conceived of as locally rooted, globally integrated subjects to understand how contexts influence the meaning of issues like bikesharing and what may account for differences and similarities in these meanings. Cities and towns then, are aptly conceived of as "microenvironments with global span" (Sassen 2005:74; Sassen 2007:91). This certainly allows for

meanings to evolve locally which are in contradiction to culturally dominant national meanings. Implied is a type of subcultural meaning, which may, for example find support on a global level while standing in opposition to dominant national level culture. Thus, a local identity which has normalized cycling as a practice could stand in contrast to the national identity which hasn't, but then still be embedded in an identity of normalized cycling European context or aligned with networks of high-cycling municipalities (Aldred & Jungnickel 2014).

A concrete example from one of the cases in the present study to illustrate this phenomenon is Vitoria-Gasteiz, capital of the Basque Autonomous Community in north-eastern Spain. In 2012 the city was granted the title of European Green Capital, and has recently formed the European Biking Cities project with other cities. The city, also a member of the ICLEI (Local Governments for Sustainability) network, has seen a huge increase in modal share of cycling to above 12%, more than doubling in 5 years (http://www.iclei.org). That in a country whose cycling modal share is 3%, which is a part of a broader European context where the modal share of cycling is 8% (European Union 2014). Clearly there is no single framework of influencers that determine the organization and decisions of a city, but rather cities are parts of myriad contexts which also include ambiguities.

"The local now transacts directly with the global, the global installs itself in the local and the global is itself constituted through a multiplicity of local situations." (Sassen 2005:77) To conceive of the dynamics of the public spheres appropriately then, we must move away from a hierarchical conception of global, regional (supranational), national, subnational, and local or urban conceptions of the public sphere toward a cross-cutting model where all levels are directly exposed to each other (see figure 1).
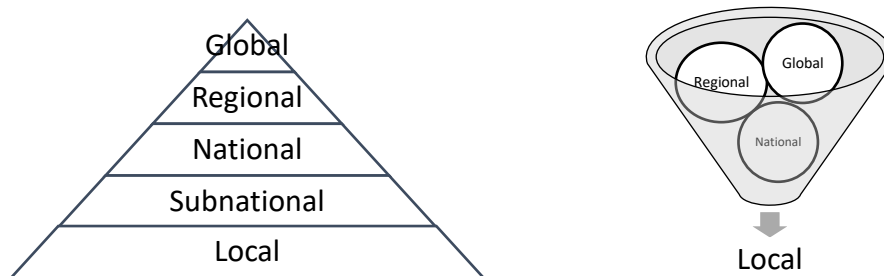
Figure 1 - Hierarchy vs. Direct Exposure at all Levels

To aptly analyze local political discourses on public spheres, we have to jettison the conceptualization of the local being isolated within the national which has exclusive access to the international level and so forth. Concretely, this means that nations or cultures are not impermeable containers, neither opaque

from the outside nor impenetrable from the inside (Tromble & Wouters 2015:375). This does not mean a departure from power structures that led us to conceive of a hierarchical conception of the various territorial levels, but rather the allowance that other connections and relations have evolved that interact with and influence these. Further, it should not be understood that the previously existing hierarchies are necessarily the stronger or more relevant ones (Sassen 2007:93). Public spheres must be thought of as trans-boundary. Following from that, the locus of power is not necessarily concentrated at the national level, but can and often is the interaction of local and global alignments (Castells 2009:18).

For the purposes of this research, I have relied partially on traditional and nationally-bounded theory regarding how media works. Hallin & Mancini's (2004) Media Systems model is bounded to notions of the national, and for good reason. As they describe, the development of media processes and output is strongly tied to political contexts which are firmly rooted and shaped by political processes which are often explicitly national. Licensing authorities and regulations which have led traditional media institutions to take on their present form, for example, remain relevant. While newer media institutions such as Twitter clearly have a different, perhaps even post-national orientation, they too can be subject to the whims of the national. The ability of national authorities to hinder the use of media, traditional or not, has been displayed time and time again (Sparks 2005).

Although the argument here is clearly for a broader conceptualization of delimitation, the data has been gathered with the explicit intention of limiting it to reflect content from and for publics that are contained nationally. This is easy to accomplish for the mass media articles in the data, but is somewhat less reliable for the Tweets. The difficulty in limiting the Tweet collection to national boundaries is perhaps evidence of the denationalized nature of the medium itself. Nonetheless the choice has been made because the theoretical underpinnings and empirical content studied are linked (though not exclusively) to the national, and certainly oriented to the local. This by no means negates the permeable, even open nature of the content to influences and even insertion of content from without the defined national scopes being applied. The purpose of this section is in part to actively acknowledge the embeddedness of the local in the global, figuring in at the same time national and geographic territoriality. This allows for the appropriate conception of interactions between all levels of the empirical elements often conceived of as national, international, or subnational instances.

2.2.2. The Public Sphere for Cities and Local Policy

After his initial proposal of the public sphere, Habermas has acknowledged that the concept did not adequately recognize the diversity in sub-national public spheres (Tromble & Wouters 2015:375). These sub-national spheres are a focus of this research. They are not necessarily beholden to or dominated by national public spheres, nor are they necessarily independent of them. Specifically, local policy options and their portrayals in various spaces in the public sphere are examined. The localities themselves are manifold and not determinate of the outcome, they are real places where individuals possess opinions on how to organize their physical transport. The local authorities, the addressees which would be assumed by classical public sphere theory, are certainly relevant, and are some of the actors to whom communication from the public sphere is addressed. However, local, city, and municipal authorities/governments are not expected to be the only addressees. As private corporations are involved in providing the service in question, namely bikesharing, they too are relevant addressees of public sentiment. This phenomenon is common in contemporary governance, with governments regularly outsourcing or cooperating with other actors to provide or carry out that which was at a previous time considered government functions. This is in part a reason for the confusion as regards the addressee, and thus legitimacy concepts in public sphere theory.

Bikeshare operators or service providers which are also often multinational in their scope, for example Nextbike or Bikeshare Holdings LLC, are entities whose local experiences in one geographical location will affect other localities in which they operate. This means that discussions about specific city's bikeshare program could certainly affect others. Likewise, individuals are mobile, and can experience social organization in places other than their own. These experiences are taken back, and fed into the public spheres concerning local issues as ideas and inspirations, as well as cautionary tales, and so forth. The bikesharing boom in recent years is in part attributable to individuals having experienced bikesharing in communities other than their own vouching for the desirability and transferability of the concept to their own community.

2.2.3. Deliberative Public Sphere Theory for Local Policy Spaces

Many of the popular social media outlets within which public deliberations take place are internationally active and accessible platforms. However, this does not necessarily imply that the deliberations themselves are of an international orientation. Kwak *et al.* (2010) find that Twitter users' networks of users that follow each other reciprocally are likely to be in close local proximity to one another, especially

for those users with smaller and medium sized networks of this type (Kwak *et al.* 2010:594). The implications of this is that the infrastructure of the international network Twitter certainly displays the potential for deliberations about local politics, while at the same time not excluding geographically distant interlocutors from participating in these locally focused discourses.

The emphasis placed on foundations of a common lifeworld for deliberation (Habermas 1984b, 1992; Risse 2005) would thus be a real potential for deliberations on local issues. Local proximity of (at least some) interlocutors can be assumed, and is enabled in the delimitation of the content used in this research. Voluntary participation in contributing to or reading exchanges linked together by hashtags or keywords on Twitter, along with a minimal common affinity for digitally mediated communication thus can be assumed to form the basis of what Habermas refers to as a *common lifeworld*. Also, aside from a likely geographic affiliation, the interlocutors studied here also share a temporal union because all of the texts were produced during the collection period (or directly before it began).

So certain basics of deliberation are fulfilled. Many of the interlocutors are talking about the same thing in the same place at the same time. Other requirements derived from theories of deliberative democracy cannot be expected (or observed). For example, the assumption cannot be made that all interlocutors on social media are motivated by truth-seeking ambitions. Further, we can assume that social media is susceptible to the same types of power distortion as is present in other mediums or other forums. Power permeates social media discourses much in the same way as elsewhere, leading us to reject the idea that social media leads to an ideal type of public sphere as described in normative public sphere theory (Fuchs 2014b, 2014a). This however is not cause to jettison the whole idea of social media as a contribution *towards* a public sphere. This research intends to decipher a part of the inquiry that results from recognizing this: How exactly, and what exactly does social media contribute to an imperfect public sphere?

2.3. Social Media's Contribution to a Democratic Public Sphere

Developments in communication practices are progressing, leading to what Chadwick (2013) has recognized as the hybrid media system. The establishment of what (Chaffee & Metzger 2001) call media communication (as opposed to the former paradigm of mass communication) involves a plethora of voices in a many-to-many communication complex. The academic literature has moved beyond unbridled optimism or pure pessimism regarding what digital media bring to communication practices, but it is

harmonious in recognition of changes in communication patterns and behavior due to widespread digital media use.

Digital communication has developed quite significantly since the initial euphoric expectations of online political communication. Even before Putnam's (2000) autopsy of the societal ingredients which enabled and encouraged vibrancy in civil society, great expectations were being put on digital communication as a way to mend the social fabric. To some degree and in some cases, these expectations have been fulfilled; but there are also significant disappointments – many examples show that the internet has not only failed to strengthen democracy, but also undermined it.

The debate on the fulfillment of the potential of digital communication and online social networks to bolster democracy and civic engagement flared up and has not yet been concluded. It has however, been refined. The debate carried out now is not whether social media is the panacea for democracy's ills in late modernity, but rather how it affects the processes of political communication and civic participation. Seen as the deliberative organ writ large of civic participation, the effects of the rise of digital media are paramount for a normative assessment of the public sphere. Internet optimists will likely continue to underline the potential of the internet and the cases where it has furthered democracy, while internet skeptics will point to discouraging trends in democratic processes and static power distributions.

2.3.1. Media and the Status Quo

Though inevitably always happening, change is a difficult process to steer. Any proposed departure from the status quo is a difficult sell (Tyler 2006), because as Kahneman, Knetsch & Thaler (1991) have shown, individuals harbor a preference for the status quo (Samuelson & Zeckhauser 1988). The same holds true for media. As media institutions and reporting are not independent of public opinion, media institutions exhibit a preference for the status quo as well. Journalists use public opinion polls, for example, to ground the frames they use in their reporting (Pfetsch 2014). The production of information disseminated by media institutions supports the political, social, and economic system in which they exist by reproducing meanings familiar to reporters and their audiences (Hintz 2009).

"The capacity to influence or control processes of mediation is an important aspect of power in contemporary societies" (Fairclough 2003:31). Curran (2002) illustrates three dimensions of media power which all serve to reproduce the status quo: economic, political, and cultural. Economic media power is bolstered by high entry costs and private media ownership in the hands of a small elite who cooperate with other resource rich actors via advertising to entrench current economic distributions. Political media

power is strengthened by state power over media through censorship, but also through government media subsidies like press releases and conferences, government agents as the source of news (McCombs 2014), as well as the channeling of interests through bureaucratic lobbying practices. Thirdly, cultural media power ensures that those actors with established reputations and attention receive disproportionately high coverage in news production.

This third type of media power identified by Curran (2002), is supported by further research which underlines the central role that the political elite plays in shoring up the status quo. Bennett (2004; 2005) demonstrates that the views of the political elite are strong determinates of the reporting of news media in the United States. In Europe, it has been found that both journalists and politicians perceive the effects of media coverage to be even more determinate of the careers of politicians than the political content itself and that politicians especially perceive the media to be influential on political agendas (Maurer 2011). The interests and perceptions of elite journalists and politicians is growing together, as the lifestyles of major journalists and politicians converge (Hintz 2009).

Partially resulting from the symbiosis of media and politics (Louw 2005) that is connected with the ongoing mediatization of politics (eds. Esser & Strömbäck 2014), media institutions are moving closer to and becoming more invested in the political status quo. The implication of the close relationship of politics and journalists connected with established media outlets is a relationship of co-dependence which is not only perceived by the public, but by media agents and politicians themselves (see ed. Pfetsch 2014).

Although there is variance according to context, journalists and politicians both have high expectations for the media to provide or ensure transparency, while empowerment and representation were demands placed on the media by only a minority of these actors (Håkansson & Mayerhöffer 2014). Those who seek to use or hold political power have long recognized the prominence of media as a power-broker. It has been shown that the "protagonists of political communication widely acknowledge the media's role as a political power center" (Lengauer, Donges & Plasser 2014:193). Further, Maurer (2011) maintains that if politicians cannot productively establish a symbiotic relationship with media actors, it seriously threatens their political potential.

Although there certainly are differences between political communication cultures (Pfetsch 2001, 2014), actors involved in political communication come to expect certain behavior from one another. These norms serve to maintain exclusivity in the system of political communication, preferring certain types of information over others. Those actors who hold elite roles in political communication come to have a

vested interest in protecting these norms, as well as the exclusivity of the system. The culture of information communication that is established comes to be expected, and is instrumental for media's role in upholding the status quo. van Dijk (1991) for example, finds through detailed analysis of reporting, that in- and outgroup membership are entrenched by journalistic practices. This can be dependent on the political orientation of the media sources in question. van Leeuven (2008) finds that middle-class oriented news sources refer to representatives of the government in specific terms, while 'ordinary people' are referred to in general terms. This is precisely the type of elite bias that leads to cultural media power (Curran 2002) and may be seen as evidence for the perspective that political and media elites converge into one indistinguishable actor. This section has shown that the legitimacy vector of the public sphere cannot rest on mass media alone. It is also for this reason that so many expectations have come up in connection with the rise of social media.

2.3.2. Barriers to Entry in the Public Sphere

A major promise of online social media is that anyone with an internet connection can make their voice heard. While this may be the case in theory, the reality is that media exist in a competitive environment, competing for the attention of the public (Chong & Druckman 2007b; Donges, Hakansson & Lengauer 2014). This is no less true for social media, perhaps it is even more extreme; prominent individuals or institutions can take their attention capital to social media, while others may have more difficulty or not have any to begin with. Thus, the playing field for attention on social media, like any other format, is uneven from the beginning. The economic and political elite who possess significant attention capital are a minority (Crouch 2004; Lakoff 2014), and do not cease to protect their position when a new technology comes about.

2.3.3. The Digital Public Sphere is Dead, Long Live the Digital Public Sphere

The ebb and flow of scholarly consensus on media effects has suggested that due to audience fragmentation (Habermas 2006; Prior 2007), individualization (Dahlgren 2009), the decline of traditional social institutions (Putnam 2000), and selective exposure (Iyengar & Hahn 2009), there may be a new dawn for an era of minimal media effects (Bennett & Iyengar 2008; Shehata & Stromback 2013). Regardless of how the argument is made, if a new era of minimal effects is presenting itself, it will not look the same as former eras labeled thusly.

How does digital media alter political communication processes? Recent work has begun to address this question, involving how actors use digital media, and its relation to traditional media. Qin (2015) has addressed how decentralized digital media and traditional mass media differ in the framing of Edward

Snowden. Theocharis (2015) has argued persuasively that digitally networked political acts are political participation. And Boulianne (2015) convincingly concludes that the proliferation of scholarly evidence tells us that social media use and civic and political participation are positively related.

Kittilson & Dalton (2011) find that virtual connections work in many of the same ways as offline connections, potentially fostering civic engagement. Their data, however, is from 2005, when online digital activity was much less widespread, carried a different meaning, and attracted a much more specific type of individual than the omnipresent internet of today. The early adopters captured in their study may exhibit more political interest than the average.

Gibson (2013) identifies studies which have claimed that internet communications revive political affiliations of individuals and parties, and others that suggest that the control of political parties is further removed from citizens due to micromanaging technoliterate elites. Hirzalla, van Zoonen & Ridder (2011) observe that the optimists of digital futures are often led to their belief that the internet strengthens democratic participation by focusing on individual instances of this, revealing a selection bias. The pessimists, or skeptics however, are usually disillusioned by general trends in the use of the internet, which don't often point to a vibrant, truth-seeking, rational civil society. In another way of approaching the issue, McCombs (2014) suggests that the agenda-setting role of the mass media remains prominent also in the face of the rise of social media, even if its influence has diminished slightly.

Digital media communication has been studied in a variety of cases, which usually emphasize communication around exceptional or sensational events such as elections (Copeland & Römmele 2014; Dimitrova, Shehata & Strömbäck 2014; Harder *et al.* 2016; Jungherr 2016; Neyazi, Kumar & Semetko 2016), conflict and revolution (Lotan *et al.* 2011; Wilson & Dunn 2011; Castells 2012; Bennett 2013; Meraz & Papacharissi 2013), or security and transparency issues (Qin 2015). While these are important issues and rightly placed within the deliberative bounds of public spheres, it remains that little attention is paid to the effects of social media on deliberations of local, routine, and unsensational political issues. The question of routine political communication on social media is a gap which this research looks to help fill.

2.3.4. Politics and Participation on Social Media: Challenging or Supporting the Status Quo

Having established that traditional media, especially large commercial media maintain significant barriers to entry in determining the values and content communicated in political discourses, what about social media? Conventional wisdom would have it that the barriers to entry for political discussion are undermined by the many-to-many orientation of digital web 2.0 technologies, especially with social

media. Some scholarly work has made this claim as well, for example in the instance of citizen initiated campaigning (Gibson 2013; Copeland & Römmele 2014), activist politics (Castells 2008; Castells 2012), or the provision of alternatives for political information (Hintz 2009). But how do social media figure in as regards the status quo? Do corporate social media firms impact on the public sphere differently than traditional corporate media?

The development of globalization has largely expanded the reach of the capitalist economic model throughout the world (see, for example: eds. Held & Mcgrew 2007). There are limits to the traditional-type expansion of capitalism when most major populations have been incorporated into the capitalist model by this expansion, causing the agents that push capitalism to reinvent forms of capitalist expansion. The shift towards the knowledge economy in the core rich countries of the globe begin to enable another form of extraction, namely that of information. Seen this way, the extraction of labor via the internet is becoming a widespread economic practice, turning also those in rich countries into unpaid laborers.

The business model of corporate social media differs from traditional media in that it approaches the media consumers as both consumers *and* commodity. This is what occurs when individuals (anywhere, not only in rich countries) use corporate social media. The corporate social media platform benefits from increases in traffic, which makes it possible to sell more or more expensive advertising to actors aiming to reach the users of a platform. Certain knowledge about what users click on, purchase, or prefer is used to make this form of advertising effective, or valuable.

Those largely responsible for the creation of value, the users, are not included in decisions about what should be done with that value, or how it should be managed. Thus, a non-traditional way of extracting value is created through corporate social media platforms like Twitter. The assumption that simply due to the participatory potential of social media, participatory politics will be follow negates the structural set up of the dominant social media platforms. The logic of the major social media platforms including Twitter, is extractive, not political. As they are businesses, their main goal is to create and extract value. If corporate social media platforms fail to produce profits, they will cease to exist. On the other hand, if they fail to produce participatory political benefits, business continues.

Fuchs (2014a) puts forth an elaborate criticism of claims that internet communication technologies and Web 2.0 produce participatory politics. He shows that participatory culture has not reached a democratic ideal through the existence of the internet and social media. The opportunities for democratization via social media seem boundless, and many internet optimists laud the potential (Jenkins 2008; Castells 2012;

Jenkins *et al.* 2013). The tendency to see rebellions or even revolutions as resulting from corporate social media such as Twitter and Facebook (Castells 2012) circumvents the questions as to the complex causes of political conflict, and political success and failure. Similarly, productive cultural intermingling does not simply occur because of internationally-based fandom, as Jenkins *et al.* (2013) suggest. These approaches reveal a technological deterministic approach (Morozov 2011) that does not engage with relations of value production (Fuchs 2014a).

Communication technologies do not empower revolutions or actively spur political change, at best, communication technologies enable communication. The content of that communication relies on a complex historical web of circumstances. In other words, corporate social media does not fill a democratic void that it has pointed out merely by coming into existence. Media power – political, economic, and cultural – is not redistributed simply because a new medium has risen to prominence. So the role of the corporate social media in maintaining the status quo as well as maintaining the barriers to agenda-setting and even participation in the discourse should not be expected to vanish. Chadwick (2013) provides accounts of the uses of social media for political communication. Throughout his book, it can be seen that the use of social media alone does not lead to political change, revolution, or even redistribution of resources. It does show, however, that social media can be an effective tool when other forms of power (political, economic, or cultural) and contextual circumstances conspire.

Further, corporations use the information they gain to encourage consumers to purchase their products. This is one way that value is created by activity on social media sites. This type of value, however, does not remain a purely economic phenomenon. Political parties use similar approaches for campaigning purposes (Bimber 2014; Hersh 2015). The value recognized by politics for online activity is that it can help determine which voters are persuadable or open to certain policy positions, and which or how many are not. Information gathered online is not the only source for application towards these ends, but it illustrates the expansion of market logic to politics and the media. Using media to listen, not only to project, becomes a major development for politics and business in the era of digital media. This practice is based on the extraction of value from online activity for other uses. If we extend Habermas' critique of public opinion research used as justification for policy positions in the public sphere, political actors should be considered to be engaging in similar, albeit more refined practices by extracting labor digitally.

Applied to the example of the present research, social media is likely to adhere to the communication and power model thus developed. While social media may indeed give bikeshare advocates (or any other advocates or activists) a new tool to promote their projects with, it similarly furnishes those opposing such

projects or their spread the same tool. And those who entered the arena in which bikeshare policy debates are going on did so out of pre-existing power relations, which were carried into the arena. Further, corporate social media platforms or their structures should not be expected to actively help those actors pushing for change in urban paradigms.

2.4. Social Media and an imperfect Public Sphere – Legitimacy and Efficacy?

Digital or social media do not cause or result in more or better democracy. But we cannot deny that social media has some effect on the processes of democracy and deliberation; that it contributes something important to these processes. Deliberation takes place on social networking sites, and citizen interaction with politicians and political organizations is not uncommon. But what has changed with the addition of social media? How does social media change the inventory when it comes to normative evaluations of the public sphere? And what happens when the focus is specifically on local issues in public sphere infrastructure that is not inherently local?

There are numerous factors. Normatively, the concept of the public in the public sphere has changed. Interlocutors need not be permanent or even formal residents of the geographic location attached to a particular local issue around which a public sphere is built. Social media certainly makes a space for this potential to become real, but does little to encourage it or actively make it happen. For public spheres focused on local issues, the addressee is only in part governments. Addressees also include government partners or contractors, civil society organizations, and businesses. Any instance whose actions affect citizens (not only formal citizens) can become the addressee of opinion formed in the public sphere. Here, the public has normalized the practice of treating government as a service provider, and governance as a commodity (Held 2006; Ellison & Hardey 2013). The public, thus predisposed, can also apply the procedures of the imperfect public sphere used to hold governments to account to non-governmental actors. Success of the triumph of the best argument is certainly not guaranteed (normative deficits persist).

Social media is not a communication tool available only to those acting as citizens, but also to businesses and governments as well. Social capital as well as material resources are applied to discursive efforts in social media just like any other medium in any other public sphere. A particularity is that social media platforms have a diversity of users and interlocutors, while mass media institutions have a somewhat unified identity. Sometimes mass media institutions allow other voices to be heard through their

megaphone, but it should be assumed that these are carefully selected and only certain messages are allowed.

If social media is more democratic because of the lower barriers of entry to the discourse than mass media, then it has added to the public sphere's normative ambitions on the *legitimacy vector*. This can be assessed and measured by looking at the sources of contributions. For mass media, this will almost always be journalists with strong, and usually formalized ties to the media establishment, oftentimes even a dependency. For mass media, this means that the normative goal of legitimacy is failed due to the exclusion of many voices. Mass media institutions look to address their legitimacy deficits by showing that they report on issues important to the public, featuring a variety of voices in their outputs, and using polling and other public opinion instruments to justify their selection of content and perspectives.

For the Twittersphere, the makeup of the sources may be different. By determining *who* is creating the discourse/discussion by contributing, we can learn how social media performs on the legitimacy element. In theory, anyone with an internet connection can contribute to the public sphere on social media. But even if we take the leap and assume that this is the case, the allocation of temporal and educational resources, for example, are likely to exclude many citizens to some extent. This brings us to the next vector: efficacy.

If the diversity of voices on social media does not translate into loudness, reach, or other forms of impacting politics, then it has not added to the public sphere's normative ambitions along the *efficacy vector*. Efficacy, for the purposes of the present research, can be seen as when or if one platform is able to spread its own presentation (Framing/Agenda-setting) of an issue to the other medium. If we can see uptake of issues or frames from one medium to another, it would imply that that medium shares in the power to set the agenda and frame the issues.

2.4.1. Twitter and an imperfect Public Sphere

When thinking specifically about Twitter and its contributions to the normative goals of the public sphere, there are certainly some apparent shortcomings floating on the surface. These display that Twitter is not a panacea for the normative ailments of the public sphere. First off, the population of Twitter users is by no measure even close to being representative. Of the entire population of Twitter users, 81% are under the age of 30 years. Five percent of Twitter users are responsible for 75% of all Twitter activity (Sysomos

2014). Furthermore, Twitter enables various forms of censorship. Twitter users are more educated, whiter, more male, and wealthier than the average (Murthy 2013; Fuchs 2014a; Barbera 2015). Twitter rewards those with more celebrity, wealth, education, and technological ability with more attention. This indicates that Twitter is not a communication medium which is free of pre- or parallel economic, cultural, or political power distributions. Governments, in some cases can and do regulate or manipulate Twitter for political ends, or ask Twitter to not allow certain Twitter accounts to be visible in that country (Morozov 2011).

A look at major uses for Twitter reveals that politics is a minority topic, while entertainment is the predominant use of Twitter. This is demonstrated by the fact that of the top 50 followed accounts on Twitter, only 2 of them (belonging to Barack Obama and Narandra Modi) are politicians or of a political nature (Statista 2016; Twitter Counter 2016). This is in accordance with previous assessments (Fuchs 2014a). There are a four news outlets in the top 50 most followed Twitter accounts, but with the exception of the account @BBCBreaking (the BBC account for breaking news), they are all corporate news media, featuring entertainment as well as political and other news.

Research on Twitter use suggests that it is used more as an information medium than an interactive communication tool (Kwak *et al.* 2010; Chen 2015). The consumption of information may thus take precedent over dialog. This echoes Osborne & Dredze (2014) claim that due to how it is used, social media, including Twitter can "become just another publication medium." (Osborne & Dredze 2014:2)

Despite the shortcomings of Twitter as regards the normative goals of the public sphere, its important position and role in the imperfect public sphere make it a crucial medium for understanding contemporary political communication processes. Wasike (2013) concludes that of the large social media, Twitter is best suited for interaction purposes and plays an important role as a mediator and path for citizens for accessing traditional media. Further, it has been established that there are certain cases where Twitter, not mass media, is the source for breaking news (Kwak *et al.* 2010; Wasike 2013). This is confirmed by other findings that coverage, especially of sports and disasters but also local news and events are communicated on Twitter before even newswires are able to convey information to news media institutions (Petrovic *et al.* 2013). Petrovic *et al.* (2013) further find that Twitter covers a broader range of topics than newswires. This is relevant, because many local and routine political issues may lose out in 'newsworthiness' due to small range and low sensationalism.

In the communication situation of late modernity, Twitter is an important object of study (Murthy 2013) as it is tailored towards selective exposure. This enables simplified worldviews and encourages motivated but reduced rationality (Chong & Druckman 2007b). There is evidence that twitterers do tailor their Twitter environment towards self-confirming selective exposure, resulting in higher homophily than in traditional media (Barbera 2015).

Many aspects and characteristics of Twitter and other corporate social media run contrary to the normative ideal of the public sphere. The premises of this research reject the technological deterministic approach that technologies like Twitter result in social phenomena. In other words, there is no one effect that should be expected based on the introduction of a technology to a society. Nonetheless, as the public sphere is a normative ideal and not an empirical reality, it is helpful to understand how and in what ways social media contribute to the normative goals of the public sphere. That is one major goal of this research.

3. Local Political Communication in the Hybrid Media System

3.1. The Rise of a Policy Arena: The Urban

Since their first incarnations, cities have been on the rise. This trend, has accelerated in recent decades. Cities now account for over half of the world's population and the share of the world's inhabitants in cities continues to grow (Barber 2013; UN Habitat 2013). This implies that an increasing amount of activities are taking place in cities: from commerce and consumption, to culture and communication, and causes of climate change. Mobility of people and information within and between cities is an important part of all of these phenomena. That being said, while there is a growing body of research assessing local aspects of political communication, nationally oriented communication remains a favored focus of academic interest. This research combines the two, acknowledging the growing importance of local political communication, while also accepting that media structures and corresponding political contexts remain strongly influenced by national level dynamics.

Barber (2013) argues that the potency of city governments is rising, and that city governments are especially relevant for globalized governance. Mr. Barber is not the only one acknowledging the importance of the city for the future of governance, many authors have taken a keen interest in the city and the local (Florida 2004; Hutton 2004; Landry 2005; Sassen 2007; Glaeser 2011; Harvey 2012). Cities, even within the same national boundaries, have in many dominant perceptions been pitted in competition with each other, competing for both human and material resources. This leads many city governments to consider their ability to compete for these resources when engaging in policy decisions (Fairclough 2003; Florida 2004). This type of development, which is a part of broader dynamics affecting cities, has broad consequences for how cities and municipalities do governance. The communication involved in this process, like localities in general, is becoming more and more relevant as an object of study; it is necessary to understand the dynamics of local political communication within the broader context to be able to understand local governance and its implications.

It is for these reasons that this research focuses on a local political issue that is both quintessentially local as well as global when seen as an overarching phenomenon. On the search for sustainable solutions to the various problems localities are faced with, cycling in general is gaining popularity as a policy response, both in policy circles and among the public. The policies that promote cycling, while they can be supported on a national level, are highly concentrated at the local level (Buehler & Pucher 2012). Bikesharing is a policy option confronting many cities worldwide (Shaheen *et al.* 2012). As the subject of political

communication, bikesharing serves well as an example which may be as characteristic as is possible and practical for observing political communication of local issues across national and cultural contexts.

3.1.1. Case selection: Bikesharing

"That's just a taste of the city life / They want me to bring it back like a citibike." –Rapper Consequence (on The Audible Doctor: Can't keep the people waiting)

3.1.1.1. What is Bikesharing?

The history of bikesharing goes back to the first person borrowing a velocipede, arguably the bicycle's first form. But what is meant when referring to bikeshare or bikesharing in this study is modern third generation (and beyond) bikeshare systems. These are bicycles which are accessible for rent by the public using credit or other smart card technology to gain access to the bicycles, to put down a deposit, and to attribute responsibility to an individual. Thus, the rental or borrowing is automated and does not usually require personal at the stations. The stations (also called docks or kiosks) are where bicycles can be picked up and dropped off. Often, there is information made available at the stations, such as an overview of stations and coverage area, and payment procedures and payment possibilities. Many bikeshare systems track their bicycles using wireless technologies. The most common payment plans are some form of base membership fee which enables users to use the bicycles for short periods (thirty minutes is quite common) without being charged further fees. To incentivize short-term usage and short trips, fees begin to be charged after this first period. In this way, bikeshare schemes are conceived of as being a transit tool rather than a leisure time activity (Midgely 2011; Anaya & Castro 2012; Shaheen *et al.* 2012; Ricci 2015).

Of course there are variations on bikesharing schemes, but the aforementioned characteristics are the most common. For example, Dutch bikesharing tends to be based railroad stations and run by the national railways. Some German bikesharing schemes include some uncommon free-floating bicycles, which do not rely on stations at all. While usually bikeshare uses traditional bicycles, in Spain there are some electric bicycle share programs.

3.1.2. Why Bikesharing?

There are of course many local policy issues to choose from for the study of locally-oriented communication. Bikesharing is a good example, because it represents a common trend in urbanism. Urban transport agendas throughout the world are being affected by the sustainable mobility paradigm (Banister 2008); developments and recent trends in urbanism are challenging the distribution and usage of urban space (Carmona 2015), where the emphasis on movement, especially related to the automobile, are no longer seen as the most important usage of public space. If policy options are constrained by public

acceptability, sustainable mobility – a goal internalized by many urban policymakers – must be palatable to the public. Achieving this goal necessarily involves the public, and policy changes as well as behavioral change are both key elements. Bikesharing can be seen as representing elements of both sides of this sustainable mobility sandwich, with low barriers to implementation as well as use. Taken a step further, bikesharing is representative of general trends in the way cities are being built and governed.

The challenges that cities are facing today, and the reasons they may choose bikesharing as a response, also have much in common. The dominant paradigm of automobility has brought with it a host of problems which many cities now share (Dennis & Urry 2009; Creutzig, Mühlhoff & Römer 2012). Cycling, and specifically bikesharing is becoming a more common policy response to the transport, health, and sustainability problems facing many cities.

3.1.2.1. Low barriers for policy supply and demand

On the policy side, bikeshare projects supply an option for sustainable mobility. Relative to other options to offer sustainable mobility options (urban trains, bus rapid transit systems, creation of physical bicycle infrastructure), bikeshare is not especially disruptive, and can be implemented at a low cost. By now, there are many examples to be followed and established tools and best-practices to be used for implementing such a scheme (Midgely 2011; OBIS 2011; ITDP 2013; NACTO 2016). This increases predictability, making bikesharing yet more attractive to policymakers. It also serves to emphasize the perception in policy circles of bikesharing as a desirable practice.

On the demand side, bikesharing also works toward the goal of shifting to sustainable mobility. It normalizes the practice of cycling (Goodman, Green & Woodcock 2014), making cycling, whether with bikeshare or not, a more accessible mobility option. The usual low cost of using bikeshare, and the elimination of responsibilities connected with cycling like maintenance, theft prevention, and storage lowers the barriers to cycling for individuals (Shaheen *et al.* 2012; Fishman, Washington & Haworth 2013). Further incentives include health benefits (which are increasingly becoming a consideration in individual's transport choices (Banister 2008)), and flexibility, offering on-demand access to bicycles.

3.1.2.2. Bikesharing is on the rise

The recent history of bikesharing is one of unprecedented growth (Fishman *et al.* 2013). In the year 2000, there were a total of six bikesharing programs worldwide. It took a while, but roughly in 2006, bikesharing began to explode, breaking the one hundred mark in 2007. By 2010, bikeshare programs worldwide tallied almost four hundred. This expansion continued rapidly, by 2015 the count was nearly a thousand

programs worldwide (Earth Policy Institute 2013; Larsen 2013; Ricci 2015). At the time of writing, over 1,100 globally boast operational bikeshare systems (Meddin & DeMaio 2017).

For those cities which have already made the decision to offer a bikeshare program, discussions about whether to continue the practice and what resources to put towards it are ongoing. For cities that have not, the question of whether and why or why not to pursue bikesharing is the discussion that presents itself.

There are more reasons than just the increasing popularity and occurrence of bikesharing for using this subject of policy and political discussion as a case for exploring political communication. The temporal element is similarly important. The timeframe in which bikesharing has emerged as a practice is quite compressed, meaning that these bikesharing and the surrounding deliberations have happened and are happening in rather similar temporal contexts. This adds an element to the comparative value of using bikesharing as a discourse to explore.

3.1.2.3. A coherent concept

While there are certainly other options that present themselves for the study of local political issues, bikesharing offers many aspects which can be held constant. Bike lanes or pedestrian zones, for example, can take on extremely different meanings depending on land usage patterns and practices in various cities. While bikesharing is certainly mired with its own peculiarities and idiosyncrasies depending on context, there is much which remains constant. First off, local governments are involved in decisions on bikesharing in the overwhelming majority of the cases. Funding for bikesharing projects in most western world bikeshare projects comes from municipalities and advertising partnerships (Shaheen *et al.* 2012). Questions of space allocation, funding, and business model are usually the purview of the local government. Second, third generation (and fourth, etc.) do not differ extremely in their basic configurations. The similarities between different programs tend to significantly outshine the differences (Ricci 2015). Third, the materiality is very similar. Bicycles and docking stations decided on in various cities bear a high resemblance to one another, and fulfill similar functions (Ricci 2015). Fourth, most bikeshare use is motivated by convenience (Fishman *et al.* 2013).

3.1.2.4. An accessible concept

While many issues, such as economics, the environment, or security are much discussed issues in public spheres, these carry with them implicit barriers where much of the public may perceive specialized knowledge as a requirement for participation in the discourse. Thus, due to the intangibility, non-

obtrusiveness, and perceived distance to these types of discourses, individuals may be reluctant to voice their opinion publically, for example on Twitter. Bikesharing presents a concrete policy option with clear immediate consequences: If a municipal government announces that they will implement a bikeshare scheme starting with 50 docks in a certain (Zucker 1978; Walgrave & van Aelst 2006) area, citizens will be able to observe and actually touch these docks. Bikesharing is thus an obtrusive issue And the experience is not limited to users, all citizens are likely to somehow encounter bikesharing if it comes into existence in their neighborhoods, whether it be in the form of a parking spot in front of their business being converted into a bikeshare dock, witnessing people moving around on similar looking bicycles, or literally stumbling over a bikeshare bike, citizens will encounter bikeshare. This type of direct contact – something entering into a neighborhood – offers an example of the implementation of a policy that is tangible and obtrusive. Adjusting tax regulations may affect only certain segments, building a bike lane on a certain street may go unnoticed by those who don't frequent that street, but bikeshare often aims to be spread throughout a city. It is a concrete, obtrusive, and tangible representation of a political choice.

There are numerous studies of media effects issues in the mass media (e.g.: Dimitrova & Stromback 2005; see also: Matthes 2009; McCombs 2014), and even on social media (Parmelee 2014; Qin 2015). However, the vast majority of these studies assess framing or agenda setting for non-obtrusive, abstract political concepts that will always remain abstract, such as the economy or environment. Bikesharing provides a political concept that is or can become real. Bikesharing is a political decision that can be experienced first-hand. Framing is a cognitive process that connects the abstract with the real (Wehling 2016:68), and therefore should also be studied in connection with a first-hand experience. Bikesharing as a political issue allows this.

Furthermore, there is a large potential for the transfer of communicative influence or attention from other arenas into the Twitter arena (Murthy 2013; Fuchs 2014b). Celebrity and prominent sponsors can often be used to shift attention to a certain issue (Pfetsch *et al.* 2013). This has been the case with numerous issues from celebrity figures like Lady Gaga's involvement in the LGBT movement or Leonardo DiCaprio's involvement in climate change awareness raising. While this type of media attention certainly exists and can affect deliberations on policy and other issues, bikesharing is not so often given this type of attention, so it remains relatively non-sensational. This provides an opportunity to observe discursive processes between citizens, where the opinion formation and expression is more likely to be formed and influenced locally.

3.1.2.5.   The policy promises of Bikesharing

Reducing congestion and carbon emissions are common policy goals linked to bikesharing (Kennedy *et al.* 2010; Midgely 2011), as well as improving public health through increased activity (Rojas-Rueda *et al.* 2011; Garrard, Rissel & Bauman 2012; Fishman, Washington & Haworth 2015), improving safety of cities (Shaheen *et al.* 2012), increasing cycling and mobility (Goodman *et al.* 2014) as well as pursuing local economic benefits (Anaya & Castro 2012) are cited in academic and policy documents as reasons for bikesharing (Ricci 2015). This has been transported to the media representations of bikesharing as well. Shaheen *et al.* (2012) state that "Bikesharing benefits can include (1) increased mobility options, (2) cost savings from modal shifts, (3) lower implementation and operational costs (e.g., in contrast to shuttle services), (4) reduced traffic congestion, (5) reduced fuel use, (6) increased use of public transit and alternative modes (e.g., rail, buses, taxis, carsharing, ride sharing), (7) increased health benefits, and (8) greater environmental awareness."   (Shaheen *et al.* 2012:184–185) Thus, bikesharing is an ideal demonstration of a cross-cutting issue that represents policy consolidation (Banister 2008; Stead 2008).

Despite there being many commonly perceived advantages of implementing bikeshare programs, common challenges also remain. Some of the major challenges are the perception of safety of cycling in general, which extends to bikesharing and can act as a barrier to implementation or use. Rebalancing, the practice of municipalities or bikeshare operators of moving bikes around to different docking stations to ensure that the distribution can meet the demand. Another common problem is accessibility. Especially in North America, Bikeshare is commonly criticized as public provision of benefits and opportunities to richer and more dominant segments of society, while neglecting poor and minority communities.

Bikesharing is a prime choice for observing the communication of local policy options. It is a recent development in urbanism which represents the types of decisions many cities are evaluating. It promises much that can be subsumed in what Banister (2008) has deemed the sustainable mobility paradigm (Shaheen *et al.* 2012; Goodman *et al.* 2014; Ricci 2015).

4. Local Contexts: Transport as a political issue

The following provides context for understanding the discussions and discourse on bikesharing in context, and in the three case cultures selected for this study. The meaning of mobility will differ according to culture (Cahill 2010), as will the structure and meaning of media (Hallin & Mancini 2004).

There are three major goals for this section. First, I examine what transportation, specifically cycling, means as a political issue. This requires attention to the local context in the case cultures, as the meaning of cycling, and therefore also the impact that policy and policy discussions have, are dependent on culture (Oosterhuis 2014). Second, I construct a theory of media power associated with the status quo when it comes to cycling as a transport-political issue, showing that challenges to the status-quo are subdued by mainstream media reporting. This creates a foundation for popular conception of cycling to be seen as a threat to the status quo or at least as an outsider idea questioning the familiar way individuals in western cultures know and move about their cities. Third, I dive into more detail on what cycling and bikesharing means in the cultural contexts of my three case studies. Is it a divisive political issue, is it politicized heavily or a fringe topic? Further, in how far is it a salient issue?

4.1. Transport policy *is* social policy

Common discourses related to social policy focus on health, education, employment, and housing. Thought further, transport provision (or lack thereof) represents a lynchpin for all of these issues, rendering transport crucial for any successful social policy (Cahill 2010). Seen in abstract terms of accessing society, impediments to transport hinder individuals in their ability to take part in social happenings, in other words, transport is a determinate of taking part in society. Citizenship then, is contingent on the potential for mobility; this makes it clear that transport policy *is* social policy, especially when we begin to consider issues such as equality of access to mobility. Transport is an issue of social policy, just as are health, education, and so on.

4.1.1. The political context of Transport

Since the 1990s in all three case countries, but especially in the USA and Spain, we have witnessed a drifting away from Keynesian welfare state politics towards more neo-liberal models of governance. This involves the transport sector as well, which is characterized in the present era by the overlap of public responsibilities and private interests. In the case of bikesharing, this is evident in that the vast majority of all bikeshare programs exist as public-private partnerships, or completely private entities working closely together with local authorities to provide the service.

This development can also be noticed in the merging of individual roles of citizen and consumer. Here, citizens are encouraged or expected to behave as consumers of public services in their interactions with the state (Ellison & Hardey 2013). Though commonly referred to in relation to social policy, this type of interaction applies to transportation services as well (Aldred 2012). This results in a complicated situation in which governments attempt to push individuals toward making choices that align with government-identified goals, such as sustainability, while trying to avoid the forced implementation of top-down, state directed plans to achieve them (see, for example the debate on 'nudging': (Thaler & Sunstein 2009; Oliver 2013; Wilkinson 2013).

Cities have been expanding in terms of population and geographic size, and accordingly, the speed of travel through cities has increased. At the same time, time spent travelling through cities has remained relatively constant (Banister 2008). A major goal of urban planners and city officials, especially those responsible for transport has been to move as many people through cities as quickly as possible. For the past century, argues renowned urbanist Mikael Colville-Andersen we have been interpreting this goal as being equivalent to the goal of the maximum number of cars can be moved through cities quickly. The argument going forward, he claims, requires a reassessment of the goals of transport planning, especially traffic engineering. Colville-Andersen (2014) claims that "It's time to change the question. If you ask "How many PEOPLE can we move down a street?", the answer becomes much more modern and visionary. And simple. Oh, and cheaper."

Mr. Colville-Andersen's approach is one that has been gaining traction in the past two decades. It is bolstered by the paradigm of sustainable mobility, itself a concept in transport policy discussions which is easily accepted in theory, but proves more difficult to implement due to the historical development of urban areas with a focus on automobiles (Banister 2008; Dennis & Urry 2009). Nonetheless, the promise of sustainable mobility carries substantial weight in the contemporary policy discussions.

The political context(s) of cycling

Cycling, as a subcategory of a sublevel policy realm, is often not construed as a political priority. Transport policy rarely falls into the domain of 'high politics.' Especially urban transport policy is seldom perceived as a part of strategic national interest. Often the purview of local administrations, transport policy is thus trapped in the status of second-level politics at best. As an issue, cycling policy lacked prominence in major post-war development plans, being marginalized by modern motor-focused approaches to infrastructure, and, after that, not being linked to carbon-centered models of consumer-based growth. Political discourses never construed cycling as being a strategic interest, as was the case for motorway networks

in many countries. Furthermore, cycling was not linked to economic growth as was automobile, air, and sea transport. Thus, a virtual absence of cycling policy culminated in the reality that "cycling in many countries had experienced decades of decline" by the 1970s (Aldred 2012:97).

Later, with the emergence of the environmental movement, cycling garnered some interest as a political issue due to its perception as an environmentally friendly mode of transport (Oosterhuis 2014). However, this attitude remained relatively superficial in many countries, with support for cycling and cyclists being claimed but few policy moves made for fundamental support (Longhurst 2015). Very often, especially in the 2000s, cycling was portrayed as a 'win-win' type of political issue, solving numerous problems in areas such as health, the environment, or economics (Pucher & Buehler 2017). The policy focus, however, remains not on cycling itself, but rather often on the issue with which cycling was paired. This led to a situation in which it is generally accepted that policies promoting cycling are desirable, but political will and investment failed to follow up. This fits into the liberalized policy paradigm dominant in contemporary policy circles, the responsibility to make good (sustainable, healthy, cost-oriented) choices, also in transport options, is that of the citizen. The role of government is at best perceived as to enable, which is easily achieved through token gestures. This is a comfortable policy positioning for many policymakers who perceive infringement on motorized transport of any kind to be politically risky behavior, a theme common to all the present cases.

4.1.2. Case-Specific contexts

The importance of the local context and environment are necessarily important for making sense of a study of media discourses. Therefore, in this section the focus is on differentiating between the three cases. First, it is necessary to identify the location of the discourse on bikeshare within the whole of the national public sphere. It is never a core issue at the national level, the discourse on bikeshare will be located on a local level as it is a local issue. It is unlikely to be a major issue, as its implications are not likely to be perceived as immediately disruptive on a large scale. Rather, small-scale localized controversies will accompany implementation or proposed implementation of schemes. Nonetheless, the location of the discourse within the three cases has significant differences related to media systems and affected by cultural differences shaping the respective public spheres.

Second, how do the national contexts position the responsibility for the (policy) issue of bikesharing? This is likely also to be at a local level. At this time, there is no clear agenda from any significant actor which emphasizes bikesharing on a national level. Some actors include the presence of bikesharing schemes as

a part of the criteria for city rankings, but don't tend to talk about it on any level that is broader than local other than for comparative value.

Third, what are the important national and local contexts that form expectations surrounding the issue of bikesharing? Here, questions of identity, normalization of mobility practices, and socially constructed as well as built and geographic environments are considered. These factors will play a role in how the issue of mobility and cycling are portrayed, which will offer insight as to the meaning of bikeshare in the three case cultures.

4.1.3. Context matters

"From Copenhagen to the Bay, take my advice / Life is twice as nice on a brand new public bike." –Rapper MC Mars (song: Minerals, Rock!)

The existing status quo at the time of the data collection will affect how people talk about the issue of bikesharing. If cycling is a dominant part of a society, if it is a normalized practice, it will likely be less of a sensational issue. This is in part true because normalized social practices have less inherent opposition, already having overcome most opposition to become mainstream. If individuals are aware that they interact with cyclists every day and see cyclists regularly, the idea of having a bikeshare program may seem less alarming, leading to less interest in the issue. Also possible is that the idea of spending public money on a bikesharing system when cycling already seems commonly practiced and accessible to all may again lead to opinions not favorable of such a policy. Furthermore, if the perception is that bikesharing is something that is new which will use public resources, the tenor of the discussion is likely to be quite different depending on whether there is reliable economic growth or austerity measures to stave off recession (Hilgartner & Bosk 1988).

"The very same infrastructure provision, program, or policy might have different impacts on bicycling in different contexts, making it risky to generalize about the effectiveness of any individual measure." (Pucher, Dill & Handy 2010:121) Other research has come to the similar conclusions. Based on an analysis of more than 200 published research articles plus other policy documents, Oosterhuis (2014) concludes that factors such as geography, climate, demography, or the environment are not determinate of cycling practices. The same rule can be applied to discussions about interventions such as bikeshare: preferences and opinions will vary depending on the context. It being hilly and hot, or wealthy and cold will not in and of themselves be the reasons bikesharing is successful or not, and by extension will not determine how discourses on bikesharing evolve.

4.1.4. Commonalities among the cases

While this section serves to note differences which can help to explain differences in media coverage and Twitter talk on bikesharing between cities in the three case cultures, it is also important to note that there are many commonalities between the three case cultures. In all of them, there is high media penetration, print and online news play important roles, and the use of social media, including Twitter, is common and widespread (Leetaru *et al.* 2013; Mocanu *et al.* 2013). Further, all three of the case cultures are home to a politically active twittersphere (Barbera 2015). Bikesharing as a policy option actually looks similar across the three cases. In all three, it is a relatively new phenomenon, occurring for the first time on a large scale within the last decade.

In all cases, 3rd generation bikeshare onwards, the service functions according to a similar logic, with station based smart-card models being the most prominent in all cases. Also, one can observe variation between business models of bikeshare systems within the case cultures, which accounts for more variation than between case cultures. Within all case cultures, for example, one can find bikeshare schemes which operate as public-private partnerships, fully private undertakings, or fully public offerings.

While the differences in the evolution of the cultural meaning of cycling will be expounded upon below, there are significant similarities. Until recently, cycling was not accepted as a serious or real form of transport, being "largely neglected by most European, North American and Australian transport planners and academics, not even considered a legitimate mode of transport" (Pucher & Buehler 2017:1). The heyday of bicycling in western countries was not directly after the invention of the so-called safety bicycle (as opposed to the high-wheeler with a large wheel in front and small one behind, which was difficult and dangerous to mount and dismount) in the late nineteenth century, but rather in the period after the First World War when utilitarian cycling was common practice among the lower and middle classes (Oosterhuis 2016). The implication across the western world, the social meaning of bicycling went from exclusive to poor and unfashionable (Longhurst 2015; eds. Oldenziel*, et al.* 2016) – exclusive mobility now being motorized individualized transport: the automobile. Attached to modernization processes, bicycling experienced decline for a few decades in western countries, until it began to re-emerge in the 1970s. This time as a fringe element of continuing modernization, cycling's image was again re-invented in the west, first as an environmentally-oriented lifestyle choice, later also in connection with health and even more recently with economic growth.

4.1.5. The case contexts: Germany, Spain, and North America

Guiding questions in this section are: What is the culture? Where is the discourse surrounding bikesharing as a policy option located? Where is the policy responsibility for this question located? Who is promoting what interpretations of problems and responses to problems?

Aldred & Jungnickel (2014) use Raymond Williams' classic definition of culture: a way of life. "Everyday behavior that often remains invisible because it is what people 'just do'." In the Netherlands, for example, it is claimed that cycling is a part of the culture, people just cycle. So there, there is no real identity as a 'cyclist.' You are just a person, and people cycle. Alternatively, in cultures where that practice is less common, identity can be built around it. This is often also the way that identities of subcultures work, they differentiate themselves from normalized practices. Here, one can go on proceed using concepts of culture as described above, as well as practice (See Aldred & Jungnickel 2014:79).

While culture is what our society provides us with (for example the notion that the space between buildings is foremost for movement through those spaces, thus streets), practices are what we do (taking our lunch break in those same spaces, exercising in them, etc.), which may deviate from what culture intended. While culture is a determining factor, practice allows for agency, because practices, unlike culture, does not emphasize restrictive factors, but rather activities. "Practice theory conceptualizes individuals as actively manipulating the elements that comprise practices, these being materials, competences, and meanings." (Aldred & Jungnickel 2014:80; Cox 2015a) The materials focused on in this case will often be bicycles and docking stations, technological infrastructure enabling credit card payment and mobile phone coverage, but also streets and buildings, space, clothing, etc. The competences are the ability to ride a bike, the ability to use technology to access and make bikesharing a productive activity, the ability to change transportation behavior, the ability to convey ideas, etc. The meanings are the associations people have with cycling. The images that come to mind when bicycles are considered. The people and things that are in those images, and what geographical places form the setting for those images, and the feelings that those images have all contribute to the making of the meanings attributed to bikesharing. This third element of practice theory, the meanings, are what is under investigation in this research. The meanings, however, cannot be disassociated from materials and competences.

The ability to cycle, for example, is a competence. In a culture where cycling is rare, this competence will mean something different than a culture where cycling is common, and the material, a bicycle, will also have a different meaning attached to it.

"When everyone cycles, no one is 'a cyclist'; it is not who you are but simply what you do. Conversely, where cycling is marginalized (and cycling may require higher levels of competence, or less easily available materials), characteristics associated with the practice may be more likely to coalesce into an identity (i.e., an expression of a perceived group affiliation). Practice theory helps us to understand these connections by directing attention in this way to relationships between materials, meanings, and competences, which often remain stable, yet can trigger dramatic change on an individual or societal level." (Aldred & Jungnickel 2014:80)

This quote offers a good way to understand meaning in relation to identity and cycling and how perspectives on bikeshare programs can emerge in different cultures. How social identities are associated with cycling, mobility, and bikeshare will lead to different cultures attaching different meanings to cycling.

Cycling is encouraged in all three case cultures by political elites. However, while cultural interventions in the form of promotional and educational communication efforts do not require as many resources or as much political consensus, infrastructural interventions often require a lot of both. The implementation of a bikesharing program involves physical changes to the spaces where people carry out their lives, and thus becomes a politicized issue influenced by the meanings attached to the materials (Aldred & Jungnickel 2014). Knowing who is familiar with cycling and what the bicycle represents in each culture is thus important to put the analysis of public debate about bikesharing into context.

4.1.5.1. Germany

By the time of my sample, Germany had emerged from the financial crisis, and economic growth had returned. Unemployment was low. This would suggest that it was a likely moment for the population to feel comfortable talking about spending. However, this could be countered by the tendency of the Germans to save. Further, what makes Germany unique in this case constellation is that it has historically displayed relatively higher rates of utilitarian cycling than the other two cases (Ebert 2010). Bikesharing has been heralded by proponents especially as a promising policy for supporting a budding cycling culture in cities where there has previously been very little cycling (Castillo-Manzano, Castro-Nuño & López-Valpuesta 2015). Although cycling rates are relatively low, ranging from five to twenty percent of modal share, the near absence of cycling as in many cities in the other two case cultures cannot be said of most cities in the German cultural sphere. Cycling as a whole is thus much less of a novelty in Germany than the other two cases. Utilitarian cycling in Germany is the highest of the three cases, and it is unsurprising to see people of all social groups cycling.

By 2011, Germany had five bikeshare programs, totaling 13,330 bicycles at 811 stations. At the same time, Austria had three programs with 1,500 bicycles at 82 stations (Shaheen *et al.* 2012). This does not include the public bikeshare programs with free-floating bicycles (i.e. no stations), which were and are somewhat popular to the German context, different from the other case cultures of Anglo-North America and Spain.

Germany, although it is decentralized, is densely populated and has good public transport infrastructure, between as well as within cities. The automobile industry is a mainstay of Germany's economy, and economic activity directly or indirectly linked to automobile production and use remains a mainstay of the country's export-oriented economy. The frequency of young people in Germany getting a drivers' license has declined very slightly since the early 2000s (Delbosc & Currie 2013). Further, awareness of climate change is high in Germany, it is acknowledged as a high-priority issue by the public (Aldred & Tepe 2011). In 2016, 89% of the population in Germany perceived climate change as threatening (BMUB 2017).

Overall, cycling in Germany has a cultural meaning that includes utilitarian transport. Germany has a coordinated national cycling strategy which is updated and published at regular intervals. To date, it is described as the most bicycle-friendly of all large EU member countries (Küster 2016). The strategy sets targets in terms of modal share and temporal goals. In Germany, the federal government also provides funds to states and cities (also competitively) to help with the implementation of cycling policies. Here, the historical context comes through. Touring infrastructure for cycling in Germany is often more advanced than urban cycling infrastructure.

As regards the transport-related political context in German, the overarching consensus that economic growth should not be hindered by conflicting goals is established and is not seriously challenged. Thus, in terms of transport policy, the meaning of the commonly formulated 'integrated transport policy' is determined by actors aligned with the interests of industry, and particularly the automobile industry. Schwedes (2011) provides a picture of the field of transport policy which helps explain and predict policy outcomes. A succinct example he provides is the main automobile lobby (ADAC) in Germany boasts 15 million members, and an annual return rate of 1.5 billion euros, compared with the Transport Club of Germany (VCD), the largest ecological transport lobby with 65,000 members and 2.5 million euros annual return rate. What does this mean for bikesharing and local transport policies? "When faced with a crisis, local governments remembered the economic significance of the car industry and adapted their politics accordingly." (Schwedes 2011:11)

At the point of text collection, the USA had emerged from the financial crisis and returned to growth. Unemployment was substantially higher than in Germany.

Despite recent trends in the United States which have brought some to view cycling as a serious viable form of transport, and in some cases bikeshare as a real option for transit, cycling is still largely categorized as a hobby, especially for children. Utilitarian cycling in North America is the lowest amongst the three case countries.

Cycling, and policies revolving around cycling, are often a hotly contested subject in the United States. The history of cycling in the United States never saw the bicycle become a mainstream mode of transportation, despite numerous so-called 'bicycle booms' (Longhurst 2015). The contested place of bicycles on the road and in society lacked broad and long-term support to anchor its place in North American cities as they evolved. This was partially due to the rise of motor-car transport, which won quickly in the competition for transport dominance.

The social image of cycling in the United States was [sometimes] aggressively protected. Cycling was initially promoted as an activity for middle- and upper-classes, who created an exclusionary identity-politics linked to it. The original bicycling organizations promoted certain type dress and behavior often accessible only to the social classes they represented (Longhurst 2015). This led, in turn to a vulnerable social positioning of cycling as a practice which was then easily pushed aside in favor of the car. As a result in the United States, the bicycle is widely perceived as a children's toy, with most experience associated with the bicycle coming from voters' and decision-makers' younger days. The policy situation and discussion thereof is accordingly nascent.

Further, transportation policies in the United States enabling white flight catered to the privileged who sought to associate themselves with progress and social status, embodied in the automobile. In the process of better-off white families fleeing the perceived ills of the city, automobile infrastructure was created at the cost of, and at times directly through lower-income communities (Angus 2016). The result was that there was often no infrastructure geared to cycling anywhere and the association of the automobile with wealth and social status afforded a negative perception of cycling which was not challenged until the 1970s with the rise of the environmental movement.

The current trend of wealthier classes returning to city centers again results in a displacement and marginalization of the poor through the process of gentrification. The reversal of the image of cycling,

now associated with progress and idealized as a part of a desirable lifestyle however has thus far not achieved the status that the automobile has enjoyed and still does. Individuals in poor communities often view bicycling infrastructure with skepticism. They are not familiar with cycling and cycling infrastructure, and it is often perceived as a harbinger of gentrification.

It is revealing that the United States is the only case in this study in which the right to vote comes two years after the right to drive a car. "Bicycle policies, if existent at all, are contested and do not elicit broad support" in the United States (Oosterhuis 2016). Cyclists are perceived as falling into one of two categories: being too poor to own or access a car, or part of the MAMIL (Middle Aged Men In Lycra) cult, which has educated upper-class and exclusionary associations. Overall, cyclists and motorists are perceived to be at odds with one another (Longhurst 2015; Oosterhuis 2016). This in turn serves media institutions as a conflict frame in which to present discussions about cycling policy decisions. Cycling identities in the United States are in contrast and, at the very least, implicitly critical of the dominant car culture. The dominance of the car, still unquestioned may be becoming eroded ever so slightly. In the USA, the amount of young people receiving drivers' licenses declined more than in any other case country in recent decades (Delbosc & Currie 2013).

Perhaps the most famous public controversies surrounding cycling involved former Mayor New York City mayor Bloomberg administration's push for cycling infrastructure, including bike lanes and implementation and expansion of the city's bikeshare program, Citibike. The debates about some infrastructural changes associated with cycling were so heated that one New York newspaper called a bikelane "the most controversial slab of cement outside the Gaza Strip." (Sadik-Kahn 2016)

Then city Transportation Commissioner Jeanette Sadik-Kahn brings support for the argument that the media intensifies debates, giving support for the idea that policies are more contested or unpopular in the population than is the case.

> "There may have been a more practical explanation for the end of the media frenzy: The polls started coming in. A Quinnipiac University poll found that 54 percent of New Yorkers said that bike lanes were "a good thing." This was the first of many polls that would be released in the coming months, two putting bike lanes' popularity as high as 66 percent — higher than the approval numbers for the politicians who railed against the lanes. Judged by the polls, what had sounded like a chorus of opposition in the media was actually a small but determined section of the population. […] New Yorkers were way ahead of the press and the politicians." (Sadik-Kahn 2016)

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In 2011, there were five bikeshare programs in operation in the United States and Canada (four and one, respectively), with a total of 9,222 bicycles at 803 stations in the region. (Of these, the USA accounted for four of the programs, but only 3,122 bicycles at 313 stations, and Canada had one program with 6,100 bicycles at 490 stations.) (Shaheen *et al.* 2012)

In North America, awareness of climate change is high, but its cause remains contested (Oreskes & Conway 2010; Jones & Saad 2015). Active transport is also perceived as a remedy for obesity, which is high, and there have been examples of doctors prescribing bikesharing to obese patients (Gaitan 2014).

4.1.5.3. Spain

While there does exist a relatively strong cycling culture in Spain, it is clearly oriented to cycling as a sport. Early on in Germany, cycling associations focused much more on touring and utilitarian bicycle use. In Spain, however, there was a clear orientation toward professional racing, and this is what came to be the dominant Spanish image of bicycling (Oosterhuis 2016). Spain is home to the *Vuelta Ciclista a España*, one of the world's three most popular cycling races (alongside the *Tour de France* and *Giro d'Italia*), all of which take place in countries grouped into Hallin & Mancini's (2004) polarized pluralist model of media system.

In Spain the cultural meanings of cycling are thus tied to sports (Horton, Cox & Rosen 2007); this is the most relevant and popularized association to cycling there: "a perfect specimen of a media-sports merger" (Kettner-Høeberg & López 2015:182). This orientation also led to involvement of the sports media to promote the image of cycling as a spectator sport with an emphasis on professionalized sport, inhibiting a utilitarian image of cycling. Thus, we can expect Spanish media institutions to see an entirely different stake in coverage of cycling than in Germany or the USA, where professional cycling was much less a spectacle. Further, cycling, as a professionalized sporting event, had a strong linkage to national identity and pride, causing it to play a role in nation-building and identity forming projects (López 2010). Although Spain may display the strongest regional cultural variations of all the cases, the cultural meaning remains something of a shared perspective. The bicycling industry in Spain thus also developed on a different trajectory, foregrounding competitive and sports cycles, but not utilitarian bicycles. Of the three cases, Spanish bicycle production tails Germany and North America by a significant margin. Horton *et al.* (2007) describe the Spanish cycling culture thus: "On a Sunday in Spain, many people can be seen cycling out from the towns and cities on expensive machines and clothed in specialist gear, but on a Monday morning the streets might be conspicuously absent of commuter cyclists." (Horton *et al.* 2007:7)

Spain does not have a nationally coordinated bicycling policy or agenda (Küster 2016), leaving it up to states and cities to pursue bicycling if, when, and how they see fit. Utilitarian cycling in Spain is less common than in Germany, but still more common than in North America. As of 2011, the number of bikesharing programs in Spain totaled 25, with 14,048 bicycles at 1,142 stations across the country (Shaheen *et al.* 2012).

For the period of text collection for the study, Spain was facing difficulties economically. There was relatively high unemployment, especially among the youth. Spain is also unique among the cases in this study in that it is the only one where young people acquiring drivers' licenses has risen quite substantially in the recent past (Delbosc & Currie 2013), although this data ends in 2009, just when the recession is in full swing. Spain's automobile industry is a much less prominent part of its economy than the other two cases. While awareness of climate change is somewhat lower than in the other cases, the dominant understanding of climate change in Spain is that it is anthropogenic.

5. Media Power and the Relevance of Communication

5.1. Power in Communication is Communication Power

Castells argues that the control of communication and information is the foundation of power (Castells 2009). When a social practice changes and a different one replaces it, this is the result of a communicative process in which social actors were able to influence other social actor's interests and priorities. The power of communication is not merely an immediate decision-affecting element with limited longevity. Rather, it is that in which decisions and actions are embedded, as communication has full potential to determine the foundations for our "worlds of reference." (Ciofalo & Fioravanti 2015:29)

5.1.1. Communication Power, Social Media, and Place

In an important way, communication power hinges on attention. If communication is not received, then the message has no impact. An easy analogy to make this a bit more concrete is a hungry person passing a restaurant with no sign. The restaurant has failed to exert power, i.e. to make the hungry person do what they want them to do (consume their product), because the hungry person is unaware that the building contains a restaurant. This failure to exert power resulted because an important communication aspect failed.

Social media works in a similar way and is permeated by communication power. Take the example of TripAdvisor.com. The website, which began in 2000, changed the relative power of signs and advertisements. Where a sign 'Restaurant' may guide a hungry individual to a restaurant, some individuals now guide themselves to real, physical local places by nature of TripAdvisor suggestions. The communicative power embodied in TripAdvisor routinely influences individual decisions. This is based in a complex cognitive process, individuals may have learned somehow to put their trust in recommendations on TripAdvisor, which in turn creates trust by encouraging users to input experiences, and so forth. The important aspect of this analogy for present purposes is that this represents a *virtual space* which channels power over actions of individuals, variously at times overcoming or supporting or supplementing material resources (such as signs) in *real spaces* (Ciofalo & Fioravanti 2015).

The result of this is that virtual spaces and real spaces rely on and interact with one another. They are not divided, they produce and reproduce realities in tandem. Power, as such, is not isolated to one particular realm either. Virtual power is fungible in physical reality and vice versa. For this reason it is important to conceive of power as permeating structures, theoretical, symbolic, or physical. The effect is that the power to create a belief, a frame of reference, which leads to a particular action, leads us to think that our cities

are best created or changed in a certain way, and leads us to support or oppose practices, such as the implementation or not of a bikeshare scheme. How power figures into this, then is in the ability of the media to shape how we believe reality is, and how it should be.

However, the due to the agency and interests of media itself, media organizations cannot be seen as a neutral power broker. Castells (2009) claims that the media are the "space of power making." In terms of the ability to create reality, the media are constitutive of and constituted by reality. This give them a necessarily close association with power. "The media are intertwined environments subjected to the influence of other cultural, economic, and political forces, which, in turn, reveal themselves capable of framing reality through the media themselves." (Ciofalo, Di Stefano & Leonzi 2015:3)

5.1.2. Operationalizing Power for Communications analysis

Castells (2009) argues that "democracy is about a set of processes and procedures, it is not about policy. Indeed, if the state intervenes in the public sphere on behalf of the specific interests that prevail in the state, it induces a legitimation crisis because it reveals itself as an instrument of domination instead of being an institution of representation." (Castells 2009:12)This means that if state representation in the public discourse (on either platform, social media or print media) is discovered, it is an indication of failing the normative goals of the public sphere. So extensive or partisan tweeting by government (or government dictated mass media output, for that matter) can be seen as evidence that the state is dominating rather than representing what citizens choose. The extent to which they do this is a measurement of power, measured by a number of tweets and retweets in the case of this research. The number of articles in which public officials are cited in their capacity as such, this is relative power.

Ideas and frames are 'cultural materials.' Culture is an essential part of communication, and ideas and frames are aspects of communication. "So, ideas may be generated from a variety of origins, and linked to specific interests and subcultures (for example, neoclassical economics, religions, cultural identities, the worshipping of individual freedom, and the like). Yet, ideas are processed in society according to how they are represented in the realm of communication. And ultimately these ideas reach the constituencies of each network, depending on the constituencies' level of exposure to the process of communication. Thus, control of, or influence on, the networks of communication, and the ability to create an effective process of communication and persuasion along the lines that favor the projects of the would-be programmers, are the key assets in the ability to program each network." (Castells 2009:46) This quote is from the description of Castell's two dimensions of *network-making powers*, which he asserts is the paramount form of power in the network society (Castells 2009:47). Network-making power, as described

by Castells, resembles a mechanism for exerting influence or authority via communication. The two dimensions, the *programmers* and the *switchers* are basically responsible for providing communicative content upon which to base social action (programmers), and aligning interests and broadening support for, and fending off competition to the interests of the actors behind these motivations (switchers).

Power, then, can be seen as the capacity to establish acceptance and support for social action by providing reasons, rationales, stories, or myths for them, and ensuring their survival and perseverance by gaining supporters who 'sing the same song'. The way intermedia communication power is defined for the purposes of this research then, is the capacity to get messages and framings from one medium into another. This is clearly a process which must be communicative. Although I cannot make the claim as a result of this research that one platform (mass media or social media) has power over the other, because I don't have insight into *why* journalists or twitterers write the things they do, I *can* observe and speculate about how certain systems have failed to extend their basis of support into other platforms populated by different types of actors and different processes.

5.1.3.   Mass Media, Social Media. Media.

Media is the arena of the struggle over media power. Social media should not be thought of as a separate entity, subject to different rules and processes of power distribution from traditional media. Qin (2015) makes the argument that frames in mass media are media frames (frames in communication), while frames in Twitter are individual frames (frames in thought; see below for more on media frames and individual frames). I reject this differentiation, because both mass media and Twitter messages, and therefore the frames contained within them, are expressed (i.e. are speech acts) and published for unspecific others. Both Twitter and mass media (newspapers, for example) should be conceived of as media. This may require a revision of our concept of media and media institutions, but that in itself may be a requirement for understanding the hybrid media system. A main difference between mass and social media is that the producers of the content on social media are decentralized and fluid, access is gained easily. Corporate social media platforms, like Twitter, also act like traditional media in that they select, curate, and promote certain content. This is an editorial function. Whether it is done by algorithms which individuals have programmed to accomplish the task, or directly by individuals does not discern the action as being an editorial function. Thus, Twitter and other corporate social media platforms are more than mere platforms, they are editorial actors as well. They manipulate who sees what content when by distributing it to their audiences based on decisions made by the leaders of the organizations. Social media is media.

5.1.4. Connecting Transport and Communication

The search for solutions to transport problems is inherently linked to communication. Commuters become aware of the shortcomings of transportation policies every time they are stuck in traffic, experience a delay in transit, or feel danger when crossing a road. These types of experiences influence public acceptability and public approval for transport policy measures, because citizens communicate them to policy makers and journalists or other intermediaries (pollsters, interest groups, etc.). The resulting mix of input received by policy makers enable or constrains political action. Sustainability is a largely accepted goal now, joining effectivity and efficiency as a top consideration when concerning transport regimes. "For an accessible sustainable city to become a reality requires active citizen support and new forms of communication between experts and citizens, through new forums for discussion and the involvement of all major stakeholders" (Banister 2008:74).

Certainly mass media is not a new form of communication, but it remains a highly relevant factor in shaping and communicating public acceptability. Although they are not the only element required, digital media provide new potentials for achieving the necessary steps toward the realization of sustainable transport regimes. Social media are being employed (with varying degrees of success) to help achieve transport policy goals (Gal-Tzur *et al.* 2014; Aldred 2016).

6. Framing

6.1. Framing, Media, and Politics

Mediated political communication is taking on ever more importance in contemporary democracy. This runs parallel to the developments in the process of mediatization which are placing more importance on media's role in political processes (Altheide 2004; Blumler 2014). This can be observed in the orientation of political communication. Political logic in many contemporary democracies is giving ground to media logic (Donges *et al.* 2014; Esmark & Mayerhöffer 2014). A classic example of political logic in political communication is the parliamentary speech: communication from politicians to politicians with the goal of directly influencing political action such as a parliamentary vote. Media logic is observable in political communication when political actors fit their political agendas into the criteria of newsworthiness, piggybacking on conflict or other sensational or entertainment-oriented phenomena. An example of media logic is leaking documents to the press to draw public attention to an issue or reduce an opponent's public sympathy.

As more and more media consumption is happening on or via the internet, the implications of media logic and mediatization in politics change, changing also the role of media effects. Wolfsfeld (2011) asserts that of all media effects, framing is the one which will be most impacted by a shift towards internet media. The logic of this argument rests on the thesis of selective exposure, the media consumption pattern that suggests that individuals expose themselves predominantly to media which confirms their own world-views, and limit exposure to media inputs which may challenge their ideas and world-views. Framing plays a key role in this context, because internet communication makes it easier for individuals to seek out and pay attention solely to those voices which they prefer, a sort of catalyst to the fragmentation of audiences as suggested by Prior (2007). Understanding framing in the contemporary context of media logic and internet media is highly relevant for understanding political communication processes.

6.1.1. What is Framing?

There are many different approaches to framing in the literature. This section develops the concept of framing used for this research. Although other approaches will also be considered in the following, the foundations guiding the application of framing here are that framing is part of a cognitive process relating to opinion formation and affecting decision-making. Very simply put, the concept of framing used in this research focuses on the selection of considerations to connect with a public issue. Framing is strongly linked to justification or legitimation.

Acknowledging that the use of the term 'framing' was very incoherent, Entman (1993) sought to bring regularity into its use: "Framing essentially involves *selection* and *salience. 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. Typically frames diagnose, evaluate, and prescribe." (Entman 1993:52) This oft-cited definition did serve to emphasize some aspects of the term framing, offering scholars a much needed structure with the four proposed parts of a full frame (problem definition, causal interpretation/attribution, moral evaluation, treatment recommendation). However, a major limitation of this definition is that it does not provide for an operationalization of framing which can distinguish it from other major media effects, especially agenda-setting and priming.

While Entman's (1993) definition focused on framing aspects in communication, he later also emphasized the role of individual's cognition in terms of mental schemes, heuristics, and scripts as providing the context for interacting with frames in communication (Entman 2004). This underlines the other side of framing, differentiating between what Chong & Druckman (2007c) refer to as 'frames in communication' and 'frames in thought.' The former, frames in communication focuses on the content and organization of messages, while the latter, frames in thought, considers how individual's cognition responds to messages. Scheufele (1999) furthered and organized scholarly approaches to framing by classifying framing studies as those where framing is either the dependent or independent variable in the research, and whether frames in thought (individual frames) or frames in communication (media frames) are analyzed.

Entman (1993) describes four locations in which frames can exist: within the communicator, within the text, within the receiver, and within the culture. The empirical object of this study can be nothing other than frames which exist within the text of the gathered corpus. That being said, the attempt is also made to identify and consider certain aspects of the communicator, as well as the culture. Communicator attributes which can be empirically analyzed are that the frames have been created by journalists (or others affiliated with mass media institutions, editors, etc.), or twitterers, a sample of which are further broken down into analytical categories. The cultures, especially the political and communicative structures, as well as the meanings of cycling, the urban, and mobilities are described theoretically to offer a context for the interpretation of the results, but are not empirically grasped.

Frames refer to "the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue" (Chong & Druckman 2007c:104) on the one hand; and are also "a

particular logic or organizing principle with which a given policy conflict is described in media reports, suggesting particular themes, interpretations, and terms by which such conflict should be understood." (Lee, McLeod & Shah 2008:696) on the other. Key elements of frames in communication are the "central organising principle[s] of a media message—the way that facts and ideas are assembled into messages." (Lee *et al.* 2008:697) Briefly, media frames help communicate, while individual frames help to process information received though communication. For the purposes of this research, frames are media frames, synonymously frames in communication.

While this research focuses on media frames, and makes no claims to analyze individual frames, an understanding of individual frames is nonetheless important as it clarifies the role of the present research. The data used in this research is restricted to published messages, in the form of print media content and tweets. Using only this data, it would be impossible to draw conclusions about cognitive processes. That is why it is important to establish the framing concept used as one of media frames, not individual frames. That is only part of the concept. It will be flushed out below and narrowed in scope as questions of psychological or sociological approach, accessibility versus applicability, equivalency versus emphasis remain open.

Having identified the location of the frames which are empirically analyzed in this research, namely in texts (Entman 1993), the specific framing process which serves as the object of the study needs to be identified. Scheufele (1999) identifies four processes which are used for studying framing: frame building, frame setting, individual-level effects of frames, and journalists as audiences. This research is focused on inter-media frame building. This means that it focuses on "the dynamics of how speakers, such as media outlets, choose specific frames in communication" (Chong & Druckman 2007a:101). To media outlets as main actors in the frame building process, we add the unknown twitterer.

6.1.2. How Framing Works

This research analyzes media frames. Since these are only part of the framing story, I turn first to individual frames. Lakoff (2010; 2014) describes how framing activates neurological circuits in the brain that have exist prior to their activation. "Frames are mental structures that shape the way we see the world. As a result, they shape the goals we seek, the plans we make, the way we act, and what counts as a good or bad outcome of our actions. In politics our frames shape our social policies and the institutions we form to carry out policies. To change our frames is to change all of this. Reframing is social change." (Lakoff 2014:xi–xii) In essence he argues that repeated activation of these neurological circuits strengthens them and makes them more likely to be activated when receiving communicative input, which is what makes

framing work. The knowledge we possess is organized in our mind through systems of neurological circuits, the organization of these systems are what leads us to the emotional judgements that make up our world view (Lakoff 2010). Simply put, when a frame is used, neurological systems of circuits respond by activation, ordering the information or input being framed into the system which is already there.

Lakoff's neurological and psychological explanation of framing is reflected in Gamson & Modigliani's (1987) more sociologically oriented conception of frames as core parts of issue packages.

> "Every issue has its own special language and phrases, its characteristic arguments, metaphors, and the like. When events occur that affect policy outcomes, commentary about them draws on culturally available idea elements and symbols. The ideas in this cultural catalogue are organized and clustered; we encounter them not as individual items but as packages. Frequently it is possible to suggest the package as a whole by the use of a prominent element. […] At the core of a package is its *frame*. A frame is a central organizing idea or story line that provides meaning to an unfolding strip of events, weaving a connection among them. The frame suggests what the controversy is about, the essence of the issue." (Gamson & Modigliani 1987:180)

Packages and cultural catalogues are the results and formative inputs responsible for assembling and activating the systems of neurological circuitry described by Lakoff (2014). Earlier still, Goffman (1986) helped to lay the foundations of the sociological approach to framing research as it exists today. His concept of framing similarly emphasized that interpretations of events are in large part due to previous experiences and cognitive development. This is analogous, albeit with a different focus, to the development of what Gamson & Modigliani (1987) call cultural catalogues and packages, as well as what Lakoff (2014) refers to as systems of neurological circuits and their process of activation.

The physical systems of neurological circuits, then, help determine what individuals interpret as being good or bad, an emotional preference. This, in terms of politics, leads to the basis for policy decisions (in a broad sense). Policy action is constrained by public approval. Public approval is the sum of the approval of many individuals. Framing is linked to policy by the fact that by getting the public to consider policies in a certain way, policymakers can garner or neutralize support for that policy. Thus, if the public's *frame in thought* is that global warming must be avoided at all costs, this will trump other considerations, and policymakers will emphasize how their favored policies affect climate change. For example, Lakoff (2010) describes how the term 'climate change' came to prominence, tracing it back to a strategy memo circulated within the conservative Bush administration in the US in 2003. The argument made was that 'climate change' sounds less threatening than 'global warming.' Because policies which protect the environment were considered tedious and costly, using the term 'climate change' was a communication

choice intended to remove or minimize environmental considerations in policy discussions, and especially downplay the dangers posed by global warming to the public.

The choice of how to frame the issue of global warming, or any other issue (even bikesharing), affects public acceptance and support for policies. Communicators attempt to influence public perception in attempts to gain support for policy goals. In the previous example, the Bush administration was being instructed to invoke media frames (*frames in communication*) which correspond with, and thereby activate individual frames (*frames in thought*). This is easy and effective when there is a clear and known frame in thought which dominates the public psyche (see Chong & Druckman 2007c:105–106). The idea was that individuals perceived global warming as a threat, meaning that the neurological systems activated by the term 'global warming' encompassed the perception and feeling of a threat. This response would more likely lead to demand for policymakers to create or change policy to address this threat. By calling it climate change, a different neurological system would be activated. Then, the urgency and danger would not be emphasized, alleviating public pressure to address global warming, thereby allowing different policy issues to be focused on.

The activation of various cognitive systems thus depends on the considerations which are communicated. Public and political preferences are then dependent on which considerations are highlighted. Media frames (frames in communication) are then that which politicians, journalists, and other actors use to attain and assert communication power by activating certain systems that enable them to garner support for political goals. So individual frames are what is most salient in the mind of the recipient of a message or audience (Chong & Druckman 2007a:101). These frames "call attention to some aspects of reality while obscuring other elements, which might lead audiences to have different reactions" (Entman 1993:55). So calling attention to some aspects of reality means neglecting others, and that is part of the game of politics and power. This fits in with the explanation that individuals have a finite pool of worry (Weber 2006), where a maximum number of considerations can be given priority and affect decision making. If accept the theories of media and communication power referred to in the previous chapter, the implication of this is that powerful communicators use media frames to manipulate individual frames.

6.1.2.1. Equivalency versus Emphasis Framing

The work of Kahneman & Tversky (1979) provides the initial thrust for framing research based on the equivalency concept (see also: Tversky & Kahneman 1986; Kahneman 2003). This branch of framing focuses on differences in behavior and decision-making when the same phenomenon is described in different ways. The framing concept used in this research is not an equivalency framing concept. For much

social research, especially policy research, the phenomena that result from different framing of issues are also different, limiting the application of this valuable concept. As the present research examines the inter-media framing processes, not individual behavior or perception, the equivalency framing concept is not appropriate. Emphasis framing, on the other hand, is based on the accessibility, applicability, and salience of ideas.

For clarity, Cacciatore, Scheufele & Iyengar (2015) rightly call for more precision in framing research, especially provide clear distinctions between equivalency and emphasis framing. This research applies a concept of emphasis framing, based specifically on the selection of the considerations attached to the subject of the discourse analyzed (bikesharing as a policy choice). The selection of the considerations attached to the policy issue suggest what the controversy is about.

6.1.2.2. Accessibility and Applicability in Framing

For frames to have any effect (i.e., to activate systems of circuitry (Lakoff 2010, 2014), or packages of cultural catalogues (Gamson & Modigliani 1987)), considerations and evaluations thereof must already exist. These considerations are constructed in the memory, and must be available, accessible, and applicable (Chong & Druckman 2007a:108–109) in order for them to do that which we have ascribed to the function of frames above. Using these terms, the resulting process we call framing works in the following way: "people draw their opinions from the set of available beliefs stored in memory. Only some beliefs become accessible at a given moment. Out of the set of accessible beliefs, only some are strong enough to be judged relevant or applicable to the subject at hand. Framing can work on all three levels, by making new beliefs available about an issue, making certain available beliefs accessible, or making beliefs applicable or "strong" in people's evaluations." (Chong & Druckman 2007c:111)

The discursive struggle over bikesharing as a policy option studied here cannot illuminate which of these three levels is most or more important in public discourses about policy. The transfer of frames from one medium to another (say, from Twitter to the newspaper, or vice versa) is the empirical representation of the availability, accessibility, and applicability of the considerations used as argumentation in these contexts. The frames identified for analysis in the initial phase of this research have come to be broadly available in all three case countries. The accessibility and applicability are likely to differ depending on cultural context. (It is for this reason that the political and communication contexts and foundational meaning of the core concepts used in the example, bicycling and the urban, were expounded upon for each cultural context.)

Thus, the framing concept applied here is a sociologically rooted concept of emphasis framing, in which salience is a proxy for accessibility and applicability, which cannot be conceptually detached from one another. The application, or use of the frame (in other words, the attachment of a consideration to bikesharing in the policy discussion), is measured in terms of its loudness or strength (how often is consideration X connected with bikesharing?). The frames themselves, the considerations attached to the policy issue, have been previously made accessible; analyzing how the frames came to be accessible is beyond the scope of this study; that would be a question of priming and agenda setting.

6.1.2.3.   Framing as related to Agenda-Setting and Priming

While Agenda-Setting and Priming are accessibility-based effects, Framing relies on accessible ideas being deemed applicable or not. We can differentiate framing as an applicability effect, "while considering priming (and agenda-setting) as an accessibility effect." (Lee *et al.* 2008:699) Thus, when thinking about framing, the *applicability* of the ideas being connected is paramount. Framing is the attempt to link two concepts: "This term refers to the outcome of a message that suggests a connection between two concepts such that, after exposure to the message, audiences accept that they are connected." (Scheufele & Tewksbury 2007:15)   This research looks first at what concepts are connected to bikesharing, bikesharing being seen as an object in and of itself.

Making no claims as to how, why, or what the salience of bikesharing as an object of communication is, this research is not looking at agenda-setting in its classic first level sense (McCombs & Shaw 1972; McCombs 2014). One goal of this research, however, is to analyze the extent of attachment of other objects (or considerations or attributes) to bikesharing. Using Robert Entman's (1993) terminology, this research evaluates the emphasis of *aspects* in the communication of bikesharing, making some aspects more salient than others. The aspects in this case could be the identification of a problem, or the treatment recommendation.

To take up Chong & Druckman's (2007c) terminology, the present research assesses how certain *conceptualizations* of bikesharing are formed, according to what other objects are presented with the object of interest, namely bikesharing. Subscribing to the terminology suggested by Lee *et al.* (2008), this research is interested in the *organizing principles* of the discussions on bikesharing, which suggest *themes* or *interpretations* for evaluating policy options or even just the object itself. In that way, the *aspects, conceptualizations,* or *organizing principles* are ways to impart or suggest certain *heuristics* to those being exposed to or taking part in the presentation of and discussion on bikesharing in the mass media and Twitter. In the interpretation schemata of the individual, these heuristics "help an individual perceive,

interpret and discuss public events" (Dimitrova & Stromback 2005:404). This research, however does not make claims on the cognitive processes of individuals, but rather only what is reported in various media channels.

This process can also be called second-level, or attribute agenda setting (McCombs 2014).

> "Attribute agenda-setting and framing focus on how the objects of attention in messages – issues, political figures, or other topics – are presented. Both attribute agenda-setting and framing explore the extent to which an emphasis on certain aspects and details of these objects influence our thoughts and feelings about them. Moving beyond this general statement about their convergence is difficult due to considerable divergence among the definitions of framing." (McCombs 2014:59)

Using the terminology of second-level agenda setting, this research analyzes the salience of attributes of the object (again, bikesharing). First-level agenda setting refers to the salience of the object itself. Second-level agenda setting is concerned with the attributes which actors attach (or attempt to attach) to objects, the major difference being between attention (first-level agenda setting) and comprehension (second-level agenda setting) (McCombs 2014).

6.1.3. Studying Framing in a Hybrid Media Context

The purpose of the extended excurse above on the framing concept was to make clear the framing concept used in this research: a salience based, emphasis framing approach. A thorough conceptualization and clear definition of the framing concept is necessary to understand the relevance of frames between mediums and actors. This research then, should be understood as a study of framing, not frames as media effects. Here, the focus is on framing as a part of inter-media agenda setting. The way that frames are set and interact between media types or platforms is at the heart of this research.

Framing has been selected as the object of study not simply because it may be the aspect of media effects to be most impacted by the rise of interactive online media (Wolfsfeld 2011), but also because framing is part of an intersubjective process of meaning making, perhaps more so than other media effects. Framing is further a way of legitimizing support for or opposition to policy choices The emphasis that many scholars (Goffman 1986; Gamson & Modigliani 1987; Lakoff 2014) put on the formative cognitive experiences of individuals which endows them with the predisposition that makes framing possible is an important reason to study framing in the context of hybrid media. While agenda-setting and priming processes can be organized by groups of individuals and, they have traditionally been acknowledged as being driven by the political communication elite. Reese (2001) emphasizes the nature of frames is that they are socially

shared and persistent over time. Because framing rests so heavily on how individuals, at the point of encountering framing, have come to interpret or perceive the social world, the intersubjective aspect of framing differs from the other media effects in that framing must accept subjective meanings at the moment of occurrence. Other media effects attempt to influence or change subjective access to meaning.

The amplified intersubjective aspect of framing makes it perhaps the most important part media effects to understand in the multi-channel hybrid media system (Chadwick 2013) where audience fragmentation (Prior 2007) is a defining factor. The hybrid media environment caters well to a fragmented audience, because the proliferation of channels can incorporate or provide support for a larger number of world views. This would imply a larger number of less prominent frames across the mediascape than in broadcast media contexts where fewer frames struggle to appeal to a larger, more unified audience which has little choice but to use them as a reference point. The long term effects of this is that the cultural catalogues are less different, providing a more common ground for sowing frames.

Framing effects can be negated or complicated by strong prior opinions, values, or other predispositions, knowledge, credibility of sources, or the invoking of strong and well-established cultural norms. Framing effects can be further mitigated by the application of cognition or rational debate (Chong & Druckman 2007c). The thesis of audience fragmentation in a post-broadcast hybrid media system with media channels that affirm all sorts of beliefs would potentially minimize these effects, allowing for more diverse beliefs to be established and nurtured. Thus, frames may be in less direct competition with one another, because their proprietors are less often caused to interact with one another in appealing to a broad composition of audiences. Chong & Druckman (2007a) have suggested that competition in framing may produce something akin to rational debate by exposing people to more than one side of a debate and making them choose. However, the outcomes are not necessarily always based on rationality; this is where some scholars would see the main potential for framing effects. Kahneman & Tversky's (1979) theory points out how framing affects decisions in a non-rational way. Although he does not use the term 'framing' explicitly for this purpose, Zaller (1992) would argue that conflicting views (or competing frames) are just those considerations which happen to more salient at the time of the decision or preference manifestation. With audience fragmentation and more channel availability, the frames and predispositions they depend on may increase in number. If this were the case, we could expect a wider variety of individual frames than traditional media frames, one part of the puzzle examined by this research.

A further major difference as regards framing in a hybrid media context is the blurred boundaries between speakers and audience. In a many-to-many communication model, the monopoly on framing became less certain. Chouliaraki & Fairclough (1999) suggest that framing is decisive in the regulation and control of interaction, because of its intersubjectivity, it is necessarily a partially inclusive process. In their words, "When the regulation of communicative practices is controlled by the transmitter we have 'strong framing'; when the acquirer has a greater degree of control over their regulation we have 'weak framing.'" (Chouliaraki & Fairclough 1999:111)

The study of framing has traditionally been focused on the activities and speech acts of the elite. "Most framing studies assume that the communicators are elite actors such as politicians, the media, scientific experts, and other opinion leaders, and that the audience consist of members of the general public." (Chong & Druckman 2007c:117) Previously, journalists, politicians, and other political communication elites (common 'transmitters') had a virtual monopoly on framing-setting, determining how policy issues would be framed in the mass media. With web 2.0 and other media, there was potential for this policy-news framing monopoly to fall, or at least be challenged by citizens (formerly only 'acquirers', now also possible 'transmitters') who are able to publish globally at the click of a mouse. Full exploitation of this potential requires, however, not only the senders of the message, but also receivers. Detailed accounts show that this potential remained the exception, not the rule (Morozov 2011; Murthy 2013). "Using digital tools, non-elite activists may sometimes successfully contest television and press coverage of politics." (Chadwick 2013:64) The study of framing across media types is a subject which has thus far not been given sufficient scholarly attention (Matthes 2009; Qin 2015). That which does exist tends to emphasize the role of elite role in framing or media effects (Hemphill, Culotta & Heston 2013; Parmelee 2014).This research aims to address that gap.

7. Methodology

The analysis described in the following section seeks to map out the tensions between framing efforts and between mediums. Thus, it operates on various levels: it seeks to map out the frame usage for bikeshare-oriented discussions and deliberations within print media and Twitter in three cultural contexts; it contrasts the framing of the issue between mediums within each respective cultural context; then the tensions between cultural contexts are compared.

7.1. Content Analysis

While there is no standard method for analyzing frames in comparative media or inter-media research, an analysis of the work published thus far reveals trends which indicate certain best practices. This research orients itself towards recognized research, and combines established and proven procedures. A major part of this research was a content analysis guided by Krippendorff's (2013) classic volume. This was further specified for analyzing frames with an eye to Chong & Druckman's (2007b) four step approach to studying frames.

7.1.1. Inductive Pilot Study

The first step taken was to identify an issue to be studied. Bikesharing as a local political issue was chosen, for reasons expounded on previously. Then, an inductive pilot study was conducted. Texts from Twitter and Newspapers were gathered using the same procedure for the creation of the main corpus (detailed below). The set of texts for the pilot study from October 1st through 11th, 2014, the eleven days directly preceding the time frame from which the texts for the main corpus were gathered.

For the pilot study, a grounded theory-based approach (Glaser & Strauss 1967; Strauss & Corbin 1990) was used to inductively create categories for the most common issues put forth in association with bikesharing. This was achieved through an initial step of inductive open coding. The major question driving this step was: 'What political issues and considerations are being presented in connection with bikesharing?' The term political here refers to public concern and governance; it stands in opposition to the personal. This allowed for the distillation of categories which were oriented toward the organization of social life, including personal preferences regarding social organization and legitimation of policy ideas. Excluded in this approach, however, is content that cannot at all be linked to policy support or opposition. This largely includes occasions where bikeshare is mentioned, but not evaluated and there is no clear meaning attached to it.

While not every single issue association was accounted for in the resulting categories, the most common issue associations were grouped into six categories. These are economics, environmental considerations, mobility issues, community building, social equality issues, and health and safety concerns. This was then used to create a codebook (see below for the codes) for coding the main corpus of the content. Because community building and social equality codes often overlapped and were the categories resulting from the open coding with the lowest amount of codes among the six, they were merged to form one frame code, the social/community code. The results of this step produce what is henceforth referred to as *the five focus frames*. These are the aforementioned frames derived from the pilot study: economic, environment, mobility, social/community, and health/safety.

The goal of this process was to develop a theory on what would be the most common political issue associations with bikeshare. Through orientation toward grounded theory, the goal was nonetheless to produce a theory which could then be used for guiding the content analysis in of the main corpus (Titscher *et al.* 2000).

7.1.2. Main Corpus Content Analysis

7.1.2.1. The Print Media Corpus

A corpus of texts was created for the content analysis. To gather the texts from the print media complex, the databases LexisNexis Academic and Factiva were used. LexisNexis is established as the most extensive news content collection database available for researchers (Krippendorff 2013). For each of the main countries of every case culture (Germany, Spain, and the United States), lists were made of the 25 highest circulation newspapers. The goal was to ensure that these 25 top circulation newspapers would be represented in the corpus to be certain that the most commonly read reporting was captured. Because LexisNexis did not always include all of the 25 newspapers with the highest circulation for each country, Factiva was used as a supplement, to ensure that as many of the top 25 newspapers with the highest circulation for each country were included in the corpus. Even with Factiva, it was not possible to access all of the 25 top circulated newspapers for each country. For the North American case, all top 25 were available in one of the two databases, for Germany, 2 were not included and for Spain 5 were not included (see appendix 1 for details on which news sources were not accessible).

Thus, LexisNexis Academic and Factiva were searched for results from newspapers by country (Germany, Spain, United States).[1] Because this research looks at communication about local political issues across cultural contexts, search results in the dominant language from adjacent states were left in the corpus. This means that for the Anglo-North American case, United States and Canadian news items were included, and for the German case, German, Austrian, and Swiss sources were also included, and for the Spanish case, sources from Spain only were included. Further, the results included not only newspaper articles, but also text items from news agencies or newswires. These were included in the sample, because they are an important source of print media production and these types of information subsidies or subscriptions are responsible for much of the content produced by newspapers (McCombs 2014).

The search was a keyword search for "bikeshare OR bikesharing OR bike-share OR bike-sharing" (or equivalents in German and Spanish)[2] in any part of the news item between Oct. 12th, 2014 and March 13th 2015 (5 months). Newswires and press releases distributed by prominent news agencies were included in the search results and not removed because of their strong influence on news agendas (McCombs 2014:115). For searches, the 'Duplicates' function was turned off, to ensure that articles that may be the same or similar, but were published in different places, in different versions, or by different outlets, were included. This ensures that the variety of readers (including journalists and editors) who might access the same article but via a different source is considered. The search results were then manually cross checked, and any duplicates of the exact same article from the exact same source and outlet were removed.

7.1.2.2.   The Social Media Corpus

For the Twitter content, an application was used that carries out a search at regular intervals and saves any new tweets in an archive (*Tweet Archivist Desktop*). This application uses Twitter's stream API to search and archive tweets. Although there are other ways to access and harvest Twitter content, for example Twitter's so-called 'firehose,' prior research indicates that the stream API is appropriate for harvesting content where the search parameters return relatively small amounts of results (Morstatter *et*

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[1] Searching LexisNexis' 'newspapers' category delivers results from 'Newspaper Stories, Combined Papers'. The full lists sources available through LexisNexis and Factiva are available on their respective websites. On both databases, refining the search by selecting a country returns results from sources which are based in that country, but also from sources which are tagged as covering that country. Results that originated outside the case cultures were excluded from the corpus. For the German case, only results from Germany, Switzerland, and Austria were included, for the North American case, only results from the United States and Canada were included, and for the Spanish case only results from Spain were included.

[2] For German the search terms were: [leihfahrräder OR leihräder OR leihradsystem]; for Spanish: ["bicis publicas" OR "bicicletas publicas"].

al. 2013). This is the case for the present research, where the search parameters return tens or at most hundreds of search results per day rather than hundreds of thousands.

The keywords used in the searches were similar to those in the mass media database search, but adjusted for brevity which is common on microblogging communication.[3] The application was programmed to carry out the search every 5 minutes. The content collected is, like the mass media content, from October 12th 2014 to March 13th 2015. Because English and Spanish are languages which are dominant and official languages in other countries and populations in other time zones, the tweets from the North American and Spanish cases were filtered by location to ensure that these actually originated in the case culture indicated. The approach of Kwak *et al.* (2010) was followed to sort tweets past language to geographic location. Because geolocation entry on Twitter is unreliable, this was a necessary step. The difference in UST time and local time for each tweet was calculated, to determine from what time zone it originated. (German is mainly spoken in Germany and adjacent countries included in the German case. Unlike the other dominant languages of the case cultures, which are heavily used in many places throughout the globe, German has a single linguistic pole. Because German is spoken mainly in the German linguistic sphere heavily centered in Germany, but including Austria and part of Switzerland which are in the same time-zones, the result for the German search were not further filtered.) The largest parts of print media produced in these case cultures as well as the Twitter content are in the main official languages of the respective case countries, German for the German case, English in the North American case, and Spanish in the Spanish case (Mocanu *et al.* 2013).

Further examination of the resulting corpus revealed that in the North American case, some tweets were captured that used the English term 'bikeshare' or 'bikesharing' embedded in a Tweet otherwise composed completely or predominantly in another language. These tweets (N=99) were not coded, and removed from the sample. This was unique to the North American/English language case, tweets containing the German and Spanish search terms but otherwise not composed in those respective languages did not occur.

The resulting corpus consisted of a total of 13,263 text items. Of these, 678 are print media items, 12,585 are text items from Twitter (tweets). The breakdown can be seen in table 1.

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[3] English: [bikeshare OR bikesharing]; German: [leihfahrräder OR leihräder OR fahrradverleihsystem]; Spanish: "bicis publicas" OR "bicicletas publicas"

Through the creation of the corpus as described above, the content is only included where the presence of the concept of bikesharing exists. This cannot be qualified in relation to the vast amount of content characterized by the absence of the concept of bikesharing, this research does not seek to make statements about first-level agenda-setting (how much space or attention an issue is given), but rather the framing of the issue (how an issue is presented).

	No. of Print Media Items	No. of Tweets
German Cities	185	114
Spanish Cities	107	513
North American Cities	386	11,958
Total	*678*	*12,585*

Table 1 - Text Items per Case and Medium

The unit of analysis is a mass media article (e.g. a newspaper article or newswire), or an individual tweet. These will be referred to as text items. Each item was subsequently coded using a codebook. Metadata from each text item was retained. Thus, for the print media content, a record for each text item was kept including the date it was published, the database it came from (LexisNexis or Factiva), the case culture to which it belongs, whether the source was national print media, local print media, a news agency, or special interest mass media. For the Twitter content, the following data was maintained for each text item: the username, the date of publication (UTC date and local date and time stamp), and the username. Furthermore, data was kept linked to each Twitter text item which indicates whether: a hashtag was used, a link was included, another Twitter handle was included (the so-called '@ mention'), and whether the item was a retweet (RT). Twitter text items also received a labeling of metadata that indicating the case culture to which they belong, determined by the time-zone (as described above). For both print media and Twitter content, each text item received a code, derived from the date of publishing, which indicates in which week of the study (week 1 through week 22) the item appeared.

The codebook was conceptualized to analyze indicators of favorableness and unfavorableness through content analysis. The codes making up the codebook are based on the results of the pilot study. The codebook was completed before the coding began, and not altered after the coding process commenced (Neuendorf 2010). The texts were coded so as to make apparent the issue association most clearly being linked to bikesharing. In cases with multiple issue associations, multiple codes were given to a single text item provided that the frames were emphasized equally. If one frame was more dominant than others,

only that one would be coded. For tweets, a maximum of two frame codes per item were given. This process is intended to cover four of five established indices in content analysis: the presence of the concept or idea of bikesharing, the amount of favorable and unfavorable characteristics which are attributed to bikesharing, the frequency of occurrence of the idea of bikesharing, and especially the frequency of co-occurrence of bikesharing and other considerations to gauge the strength of those associations (Krippendorff 2013). (The fifth established index in content analysis, qualifications used to identify strength and certainty of the considerations is examined in the following qualitative analyses.)

If a text did not include any of the frames used in the codebook, but nonetheless put forward issue associations, it was coded as other. An unclear code was applied if it could not be deciphered whether there was an issue association. One further option was available for the frame code: 'functional.' Not actually a frame code, this code was applied to tweets whose main purpose is practically oriented communication. (Examples of this are asking practical questions to bikeshare operators, advertising deals, calling for dock location proposals and responding to these, sharing experiences, tweeting practical information to another twitterer such as 'meet at 10:00' etc.) Because Twitter especially allows for direct, individually oriented communication, this code was made available, but should not be considered a frame. If a tweet was functional but also included a frame, then both codes should be applied.

The texts were also coded for positive, negative, or ambivalent evaluations of bikesharing. If the position of a text was overwhelmingly positive, it would be coded as positive, even if there was a smaller element of a negative portrayal of bikesharing. Only when the evaluations were equally positive and negative was the ambivalent code applied. If a text item did not have a clear evaluation of bikesharing, it was coded 'unclear.'

This analysis is a textual analysis. It is limited by the omission of possible visual attributes (pictures, layouts and formatting, placement in feeds or on newspaper pages). The possibility remains that the omission of images and other visual attributes could change the evaluation or framing of a text item due to implicit highlighting, emphasis attribution, or other connection to the textual content. This limitation must be considered when interpreting the results of this research.

7.1.3. Quantitative Content Analysis Guidelines:

The following section describes how the codes used for the content analysis are used. The goal is to maintain high reliability in code application throughout the entire coding process. The following codes

make up the codebook used to carry out the quantitative content analysis. The codes are presented here in prose format, they can also be found in the codebook as a table in appendix 2.

Code: *Region*

This code is applied to an item to denote the location of the source of the item. In the case of print media articles, the region is determined primarily by where the institution is located. If the media organization producing the item is not within the list of regions specified as the case cultures, then the code *Other Region* is applied, and the text item is excluded from the corpus and not further coded. For tweets, the code *region* is determined as described above (in section 7.1.2.2.). Only one subcode from the code category *Region* can be applied to any item. The codes are the case cultures: the *German case culture*, the *North American case culture*, the *Spanish case culture.*

Code: *Source*

This code is applied to an item to determine what type of source it is. The source code attributes text items to one of two corpuses: the print media corpus or the Twitter corpus. Only one subcode from the code category *Source* can be applied to any item.

Tweet: All Twitter postings are coded *Tweet*. Mass media articles are coded depending on their audiences or readerships. Text items coded with this code are a part of the Twitter corpus.

Print Media Article: All text items that were returned from the searches in the LexisNexis and Factiva databases (as described above) are coded as a print media. Text items coded with this code are part of the print media corpus.

Code: *Frame*

This code is applied to an item to determine what frame is being used to present bikesharing. This code should only be applied to items when considerations are associated directly or specifically with bikesharing. Bikesharing in this case should be understood first and foremost as a policy option. This does entail, however, that bikesharing as a policy option is being referred to as a potential idea or policy for implementation, an already existing bikesharing scheme, or bikesharing not as a specific scheme but as the concept representing one or more bikesharing schemes or potential schemes.

Subcodes from the code category *Frame* can be applied to the same item. This is done only if the frames being used to present bikesharing are equally dominant in the text item. Thus if similar emphasis on bikesharing as a solution to environmental problems and bikesharing as a burden on the economy are

found in an article, both codes should be applied. If it is clear that the article places more emphasis on one frame, the text item should be coded only with one frame code.

Mobility: This code is applied to an item if the considerations associated with bikesharing are mainly of a transport nature. Articles coded with this code connect bikesharing with concepts like transit, transport, travel, trips, mobility, movement of people, getting around, distance, commuting, etc. Thus when claims are made that bikesharing has an effect on mobility, be it positive or negative, also indirectly, this code should be applied.

If a tweet refers to specific locations, that are [not] available for bikeshare rental/return, this is considered mobility. This is because it directly has to do with the concepts of transport or 'getting around', and is thus linked to mobility options/preferences/desires.

Health/Safety: This code is applied to an item if the considerations associated with bikesharing are principally related to health and safety. This code refers to two main concept groups, which are often but not always related: health and safety. Items coded with the *Health/Safety* code are those that connect bikesharing with health related concepts (such as physical health, exercise, calories, weight loss/gain, obesity, fitness), and safety related concepts (such as injury, protection, [traffic] accidents, death, physical risk and harm). Examples of instances where the *Health/Safety* code is applied are when public health is considered as being affected by bikesharing, or when traffic accidents or changes in accident rates are attributed to bikesharing. When bikesharing is portrayed as having an effect on health and safety issues, this code will be applied.

Economic: This code is applied to an item if the considerations associated with bikesharing are mainly of an economic nature. Articles to which this code is applied connect bikesharing to economic concepts such as budgets, taxes, [public] finance, sponsorship, money, revenue, financial [in]dependence, economic success/failure. This code is applied when the item refers to economic concepts when talking about bikesharing. This may take the form of discussing how bikeshare should be paid for and by whom, how the money will be raised for such a project, financial viability of bikesharing, costs associated with bikesharing, and similar or related considerations are brought up together with, or linked to bikesharing.

Environment: This code is applied to an item if the considerations associated with bikesharing are of an environmental nature. When bikesharing is brought up or referred to in conjunction with claims about environmental changes or impacts, this code will be applied. The environmental discourse is centered on climate change and more local environmental processes of change, and when these discourses interact

with the concept of bikesharing, this code is appropriate. This will often, but not exclusively take the form of statements containing claims that bikeshare impacts or has the potential to impact the environment. Thus, items with this code will often include terms such as emissions, environment, climate change, carbon, pollution, green measures, and sustainability.

Social/Community: This code is applied to an item if the considerations associated with bikesharing are those regarding social equality and community oriented goals. In this case bikesharing is connected with ideas of rising or sinking social equality or creating higher or lower quality communities. Here, bikeshare will be connected with concepts such as fairness, openness, social cohesion, social welfare, community building, social justice, and equality. When bikesharing is mentioned as impacting the social fabric within or between communities or social groups, this frame is applied.

Unclear: This code is applied to an item if it is not possible to determine what frame is being used, i.e. what considerations are being connected with bikesharing. This code is to be used if there are considerations which are connected to bikesharing, but it is impossible to decipher what they are or why they are associate with bikesharing. If there is no connection to political or social organization, this frame is also applied. (For example if the statement is: "Bikeshare is cuter with Kittens," no considerations relating to social or political organization can be applied, and thus the 'unclear' frame code is applied.)

Other Frame: This code is applied to an item if there are clear considerations being connected with the concept of bikesharing, but they do not fall into one of the other *Frame* coding categories.

(Tweet only) Functional: This code is applied to a tweet if the tweet serves mainly as a direct mode of communication between 2 parties (one of which may also be the public), to express a wish, opinion, issue a warning, inform of specific problems or situations, solicit feedback, etc. The *functional* code is indicative of communication revolving around specific, often isolated situations, which are firstly of a practical nature, not of a deliberative or public opinion-forming character.

Code: *Evaluation*

Positive: This code is applied to an item if there is a clear and direct positive evaluation of bikesharing as a concept, one or many particular bikesharing schemes, and/or of decisions or policies that aim to implement or continue a bikesharing program. This can be in the form of the author or a reference expressing positive sentiments about bikesharing and/or approving of bikesharing or its directly related results as a policy option.

This code is also applied to an item if there is a clear positive evaluation of bikesharing, its implications, or other outcomes resulting from bikesharing as a concept or specific program. This can take the form of praise, or implications that the bad resulting from bikesharing does not outweigh the good, or simply focusing on the good implications of bikesharing.

The positive evaluation also entails things that are positive connected with bikesharing. For example when bikesharing is described as successful, when tweets speak positively of bikesharing, or when bikesharing as a phenomenon or specific program is shown to be 'winning,' i.e. gaining usership from other forms of mobility, etc.

Negative: This code is applied to an item if there is a clear and direct negative evaluation of bikesharing as a concept, one or many particular bikesharing schemes, and/or of decisions or policies that aim to implement or continue a bikesharing program. This can be in the form of the author or a reference expressing negative sentiments about bikesharing and/or approving of bikesharing or its directly related results, or attributing responsibility for negative outcomes to bikesharing policies or schemes.

This code is also applied to an item if there is a clear negative evaluation of bikesharing, its implications, or other outcomes resulting from bikesharing as a concept or specific program. This can take the form of critique, or implications that the good resulting from bikesharing does not outweigh the bad, or simply focusing on the bad.

Ambivalent: This code is applied to a text item if there is are both clear and direct positive and negative evaluations of bikesharing (see above codes) within the text. This code is only applied when there is not one evaluation which is stronger than the other, meaning that there is roughly equal emphasis, argumentation, and content supporting both evaluations.

Unclear: This code is applied to a text item if it is not possible to determine if or whether there is an evaluation of bikesharing. Thus, only if no direct evaluations or evaluations through considerations attributed to bikesharing as a concept, concrete program, policy, or practice can be discerned should this evaluation be applied.

7.1.3.1. Reliability

The content was coded by the author. To account for internal reliability, a second coder was trained in the coding procedure. After an extensive training process, the second coder coded a random sample of text items including items from both print media and Twitter. Reliability is inferred from agreement; Krippendorf's alpha, a statistic for assessing agreement (Krippendorff 2004) which has been proposed and

accepted as a standard reliability measure (Hayes & Krippendorff 2007; Neuendorf 2010; Krippendorff 2013). Krippendorf's alpha was therefore used to measure internal consistencies of the application of evaluations, the five focus frames, other frames, and unclear framing. Krippendorf's alpha was calculated using ReCal2 (for nominal data with two coders) (Freelon 2010, 2013). This resulted in $\alpha = 0.817$ for the evaluations, $\alpha = 0.793$ for the economic frame, $\alpha = 0.851$ for the environmental frame, $\alpha = 0.738$ for the health/safety frame, $\alpha = 0.723$ for the mobility frame, $\alpha = 0.724$ for the social/community frame, $\alpha = 0.720$ for other frames, and $\alpha = 0.665$ for the code for unclear framing. Agreement for the application of the functional code for Twitter content resulted in $\alpha = 0.823$. These values are acceptable; the code for unclear framing showed high agreement, but the alpha statistic is low because of the high potential for coincidental agreement due to the infrequent application of this code by both coders. (See appendix 3 for a table of the agreement statistics.)

7.1.4. Qualitative Content Analysis:

There are many approaches to qualitative content analysis, the distinctions of which are not always clear nor exclusive (Hijmans 1996; Neuendorf 2010). The approach used in this part of the research combines aspects of narrative analysis and interpretive analysis. Aspects of narrative analysis emerge from the structural composition of the content studied. The story of bikesharing is carried by the characters, who are the producers of the texts studied. The characters in this case are attributed with agency to create the narrative. Character-agents in this study are broadly two: print media and social media actors. These are at times further broken down into specific media organizations or authors of twitter contributions.

Aspects of interpretive analysis are also borrowed from to form the approach to the qualitative content analysis carried out here. The role of the researcher is that of the observer as the construction of (group) perspectives are analyzed in depth (Hijmans 1996). While interpretive analysis is often in a constant state of revision, this part of the research does not seek to revise or refute any of the knowledge gained through the quantitative analysis. Rather, it serves to explain in more detail the implication of those results. Thereby, the researcher is in a constant state of discovery, but prompted by the framework set through initial interpretations of the quantitative analysis. While the quantitative analysis focuses on questions of what frames and evaluations occurred in the corpus, when and in which medium they occurred, the qualitative analysis seeks to explain how they came about so as to enable the grounding of these explanations in context and theory.

8. Results of Quantitative Content Analysis

This section serves to present the results of the quantitative content analysis. The results are first presented by case culture. For each case, the results for each media type (print media content and Twitter content) are presented separately, before progressing to the comparison of results between Twitter and print media within case cultures, and finally the results are compared across cases.

8.1. German Case

In total, 299 text items make up the corpus for the German case. Of these 185 were from print media. The results of the coding for frames and evaluations from the content analysis can be seen in table 2. There are 114 Tweets that make up the Twitter corpus for the German cultural context. Table 3 shows the results of the quantitative content analysis for the Twitter content from the German case. The texts were collected over the course of five months. Figure 2 shows how many text items from each week make up the corpus for both Twitter and print media content. In the German case, the number of print media items in the corpus exceeds the number of Twitter texts absolutely, and at most points throughout the duration of the study, with the exception of four weeks (1, 5, 14, and 18).
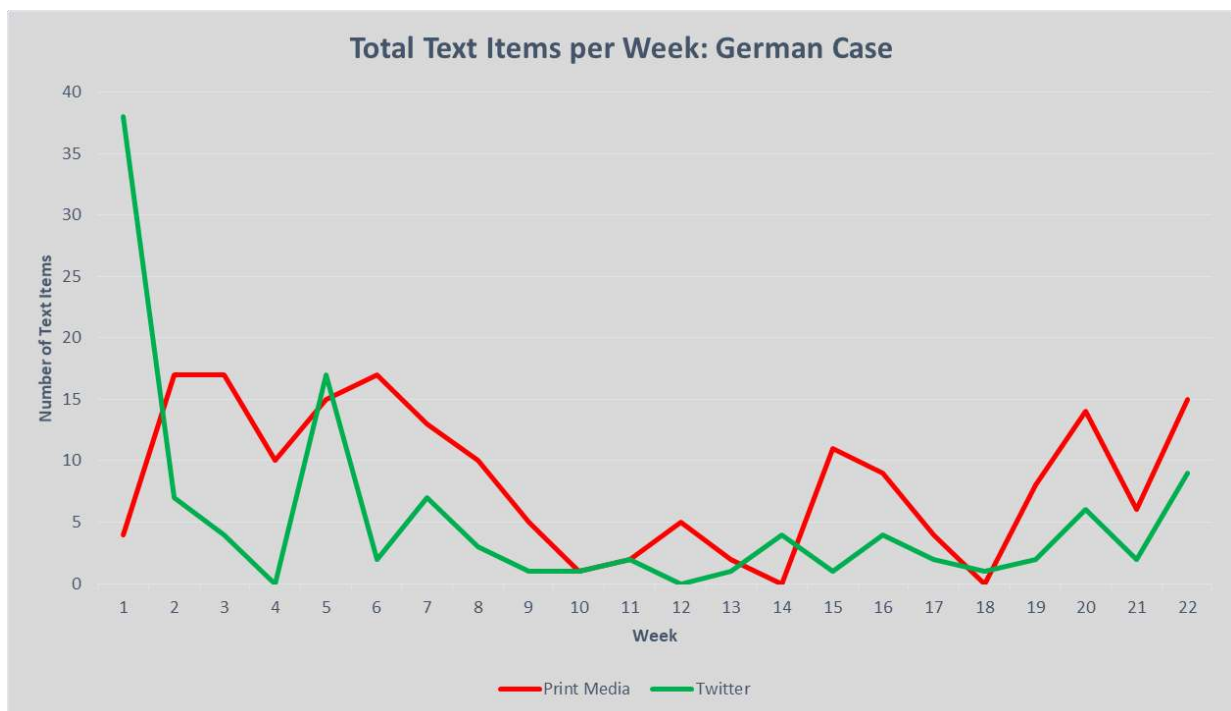
Figure 2 - Total Text Items per Week: German Case

8.1.1. Print Media

The overwhelming majority of the German print media text items (69.7%; n=129) had a positive evaluation of bikesharing, while only very few (n=7) contained a negative evaluation. 18.4% (n=34) of the print media items were ambivalent, and 8.1% (n=15) did not reveal a clear evaluation.

The print media items in the German case revealed a clear dominant framing of the issue of bikesharing, with 74.6% (n=132) of the text items exhibiting the mobility frame. The second most frequent frame, the economic frame, occurred only 23.2% (n=43) of the time in the print media sample. The frequency of the other frames, like environment (n=4) and the social/community frame (n=1), and the health/safety frame (n=0) was negligible. Frames used in the print media corpus to attach considerations to bikesharing, but not representing a frame category identified in the pilot study (*other frame*) accounted for only 8.1% (n=15) of the text items in the print media corpus.

Results of Quantitative Analysis of Print Media Texts		Evaluation of print media frames			
GERMAN CASE	No. of Print Media Items	Positive	Negative	Ambivalent	Unclear
Total	**185**	**129**	**7**	**34**	**15**
Frames⁺					
-Economic Frame	43	15	2	23	3
-Environmental Frame	4	4	0	0	0
-Health/Safety Frame	0	0	0	0	0
-Mobility Frame	132	101	6	13	12
-Social/Community Frame	1	1	0	0	0
-Other Frame	15	14	0	0	1
-Unclear*	0	0	0	0	0

Table 2 - Frames and Evaluations in Print Media: German Case

⁺Frames may be >100% because some items were coded with more than one frame.

The majority of the print media texts (69.7%; n=129) in the German case were coded as having a positive evaluation. The ambivalent code, suggesting that both positive and negative evaluations were portrayed, was applied to 18.4% (n=34) of the texts. 3.8% (n=7) of the texts evaluated bikeshare negatively, and 8.1% (n=15) were unclear.

A look at table 2 and figure 2 reveals that the majority of all texts (54.6%; n=101) from the German print media corpus are coded with both a positive evaluation and the mobility frame. [4] These texts with the mobility frame clearly dominated the positive evaluation, the next largest frame represented in the positive evaluation segment, the economic frame, accounting for only 8.1% (n=15), with texts invoking the environmental frame and social/community frame trailing yet further behind (2.2%; n=4, and 0.5%; n=1, respectively). The second largest intersection of a frame and an evaluation is ambivalent evaluations and economic frames, comprising 12.4% (n=23) of the texts. The other frame which had texts also coded with an ambivalent association was the mobility frame, with 7.0% (n=14) of texts. The only frames found in the German print media corpus that were used in combination with a negative evaluation were the mobility- and economic frames: the economics frame represented 3.2% (n=6) and economics frame with 1.1% (n=2).
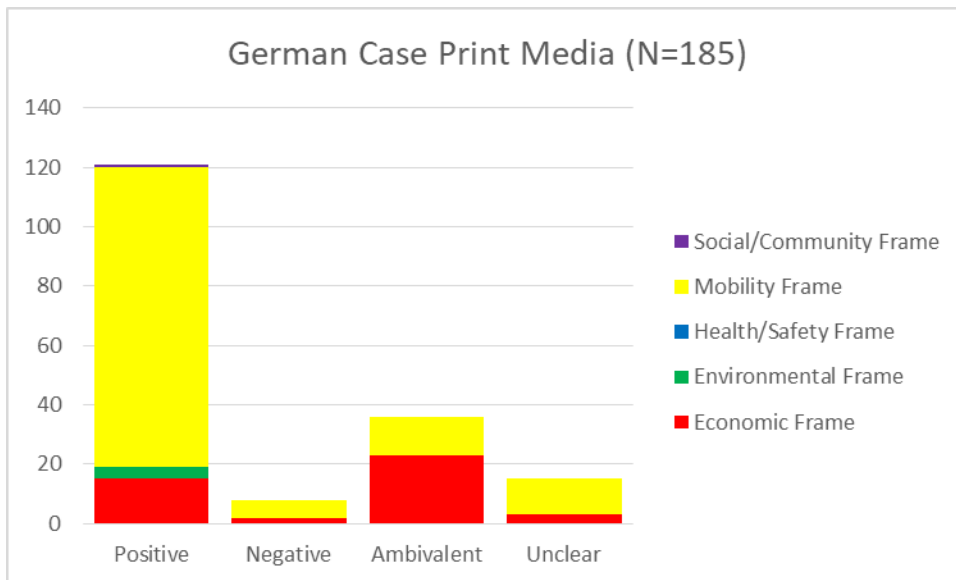
Figure 3 - Frames and Evaluations in Print Media: German Case

In sum, based on the quantitative results of the content analysis of the German print media, an overwhelmingly positive discourse surrounding bikesharing can be recognized, which is mainly carried out under the thematic umbrella of mobility issues. Bikesharing is portrayed as a mobility issue, and is further mainly presented as being a good thing, generally as well as in specific relation to mobility. The German

[4] When referring to the results of the content analysis as regards frames, the results are often presented in figures without including the categories 'other' or 'unclear.' 'Functional' is included in charts displaying Twitter results only, because this code is only applicable to Twitter text items. The five major frame groups identified in the pilot study are referred to as the *five focus frames*. When talking about the evaluations, the category 'clear evaluations' refers to 'positive,' 'negative,' or 'ambivalent,' but not 'unclear.'

print media complex frames bikesharing predominantly positively as a mobility issue. Economic considerations are also attached to the issue of bikesharing in the analyzed texts, albeit less often than mobility considerations. When connected to economic considerations, bikesharing is presented somewhat more gingerly. This conclusion can be drawn because the majority of texts employing the economic frame, the second most prominent in this part of the corpus, reveal an ambivalent evaluation of bikesharing. Negative portrayal of bikesharing using either the mobility or economic frame are very minor.

Adding the temporal dimension to the results as in figure 4 (the five focus frames by week in absolute terms) reveals a relatively consistent framing of the bikesharing issue over time in the German print media corpus. The dominant frame, mobility, and the second strongest frame, economic, are spread out in their frequency, with little clustering or definite trends of frames waxing, waning, or peaking in prominence. The one exception is that the economic frame is more strongly represented in both absolute and relative terms during the first eight weeks of the study, while its presence drops off towards the end of the time frame of the study. The environmental frame is present, but with only n=4 items in total, it cannot be assessed as presenting a peak or trend.

Figure 5 shows the evaluations of bikesharing over time, by week. It shows clearly that the print media articles in Germany consistently deliver a positive evaluation of bikesharing. The clustering of ambivalent evaluations toward the first third of the study correlates with the clustering of the economic framing (see figure 3), as can be expected considering that the intersection of the economic frame and ambivalent evaluation composes the second largest intersection of frame and evaluation codes.
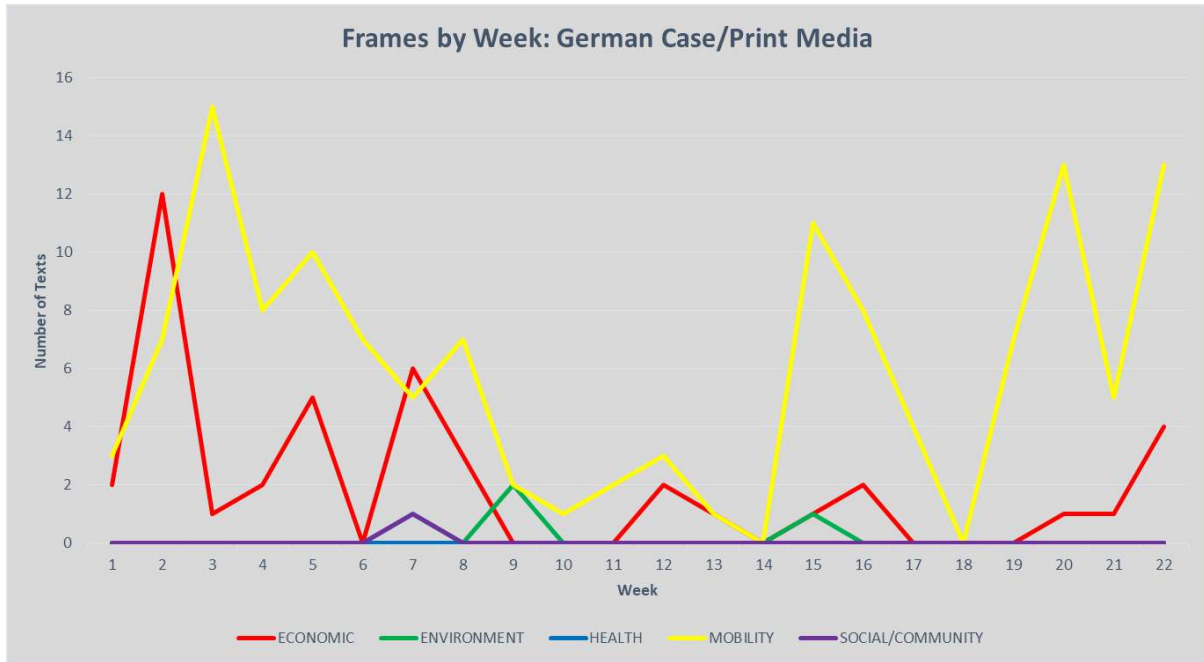
Figure 4 - Frames by Week in Print Media: German Case
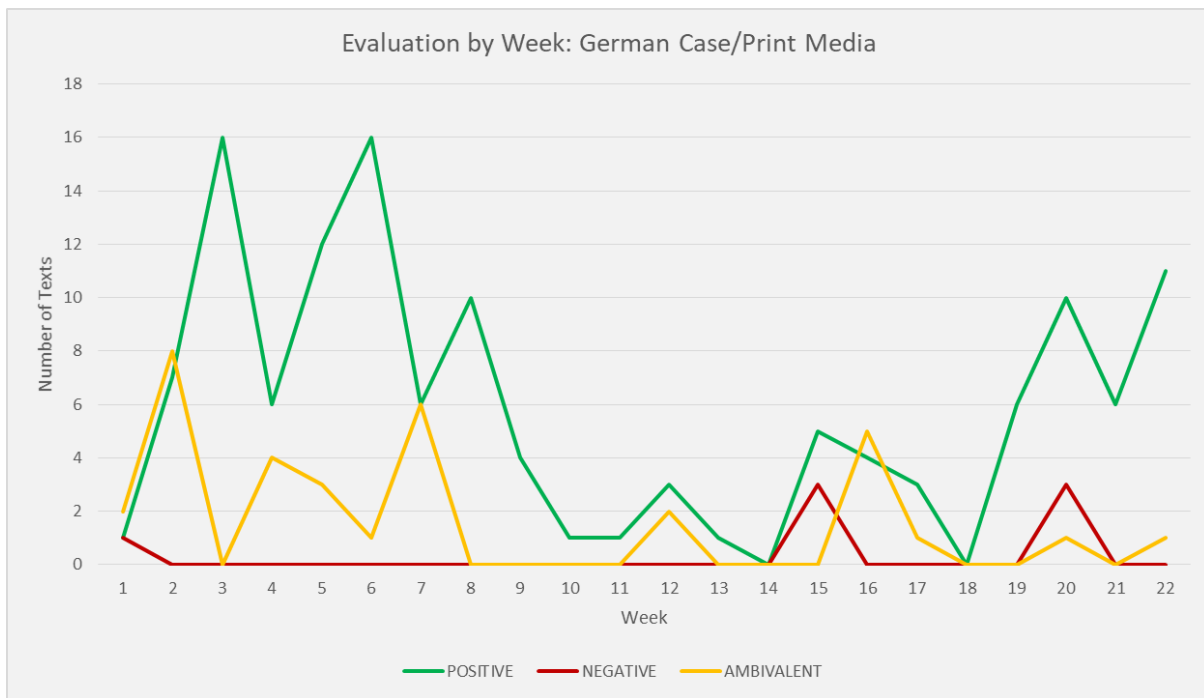
Figure 5 - Evaluations by Week in Print Media: German Case

8.1.2. Twitter

Of the tweets analyzed for the German case, 43.9% (n=50) revealed a clear evaluation of bikeshare (see table 3). 37.7% (n=43) evaluated bikesharing positively, while 2.6% (n=3) were negative and 3.5% (n=4)

ambivalent. More than half of the tweets, (57.0%; n=65) from the German case did not display a clear preference regarding bikesharing (meaning they were coded with an unclear evaluation).

The analysis shows that the mobility frame was the strongest, with 37.7% (n=43) of tweets employing this frame. The next strongest frame, the economic frame was coded in 8.8% (n=10) of the tweets, followed by the environmental frame, with 2.6% (n=3) of the tweets. Neither the health/safety frame nor the social/community frame occurred in the German Twitter corpus. 46.5% (n=53) of the tweets from the German corpus employed frames which were not part of the five main frames. 7.9% (n=9) were coded as being functional tweets.

Results of Quantitative Analysis of Twitter Texts:		Evaluation of tweet frames			
GERMAN CASE	No. of Tweets	Positive	Negative	Ambivalent	Unclear
Total	**114**	**43**	**3**	**4**	**65**
Frames⁺					
-Economic Frame	10	4	0	0	6
-Environmental Frame	3	3	0	0	0
-Health/Safety Frame	0	0	0	0	0
-Mobility Frame	43	20	2	1	20
-Social/Community Frame	0	0	0	0	0
-Functional*	9	2	1	0	6
-Other Frame	53	17	1	3	33
-Framing Unclear	0	0	0	0	0

Table 3 - Frames and Evaluations on Twitter: German Case
⁺Frames may be >100% because some items were coded with more than one frame.
*This 'frame' codes serve to explain what is happening with certain text items, but is not to be considered a frame in the sense of the other. In the 'other frame' cases, bikeshare was connected with some consideration, but not one of those identified as a main frame.

The evaluation of bikesharing from the side of the Twitter content is also overwhelmingly positive, with 37.3% (n=43) of tweets revealing a positive evaluation, while only 2.6% (n=3) of tweets evaluated bikesharing negatively, and 3.5% (n=4) receiving the ambivalent code. A high proportion of tweets, 57.0% (n=65) did not reveal a clear evaluation of bikesharing.
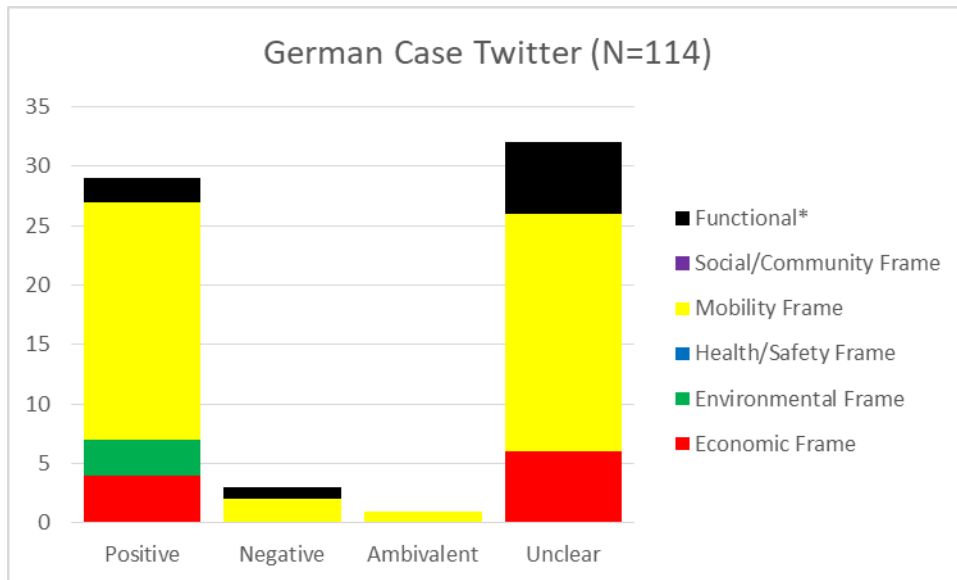
Figure 6 - Frames and Evaluations on Twitter: German Case

Table 3 and figure 6 reveal that of the five focus frames and clear evaluations, the largest intersection (text items coded with a certain evaluation *and* frame) is that of the mobility frame and positive evaluation, by a large margin. This intersection consists of 17.5% (n=20) of the tweets from the German case. The second largest intersection of this type (one of the five focus frames and a clear evaluation) consists of only 3.5% of the tweets (n=4). Other intersections are yet smaller.

Looking at the distribution of the frames over time, figure 6 illustrates the dominance of the mobility frame *when there is a clear framing.* This is not reliably the case throughout the duration of the study. Thus, little can be said regarding the temporal quantitative distribution of frames in this instance. The results of the analysis of the evaluations over time (illustrated in figure 8) is similarly thin, and illustrates the distribution without significant trends or clustering when compared with the general results in figure 6. Positive evaluations largely coincide temporally with the occurrence of the mobility frame, going along with the recognition of positive evaluations and mobility frames as the largest intersection.
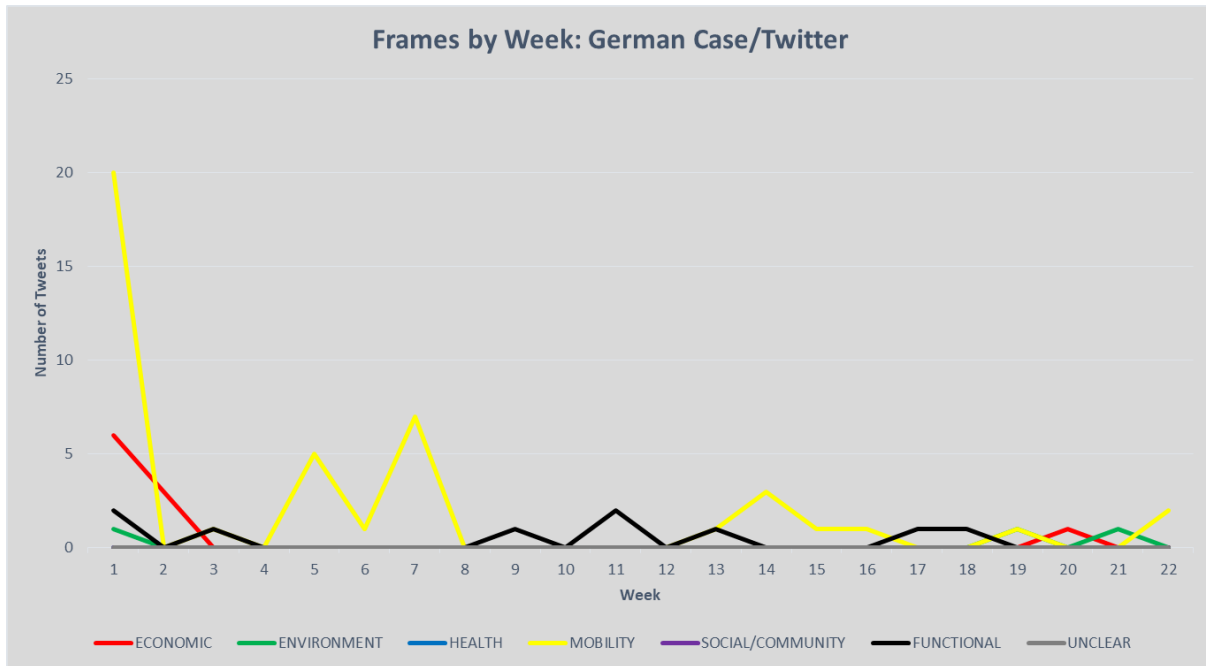
Figure 7 - Frames by Week on Twitter: German Case
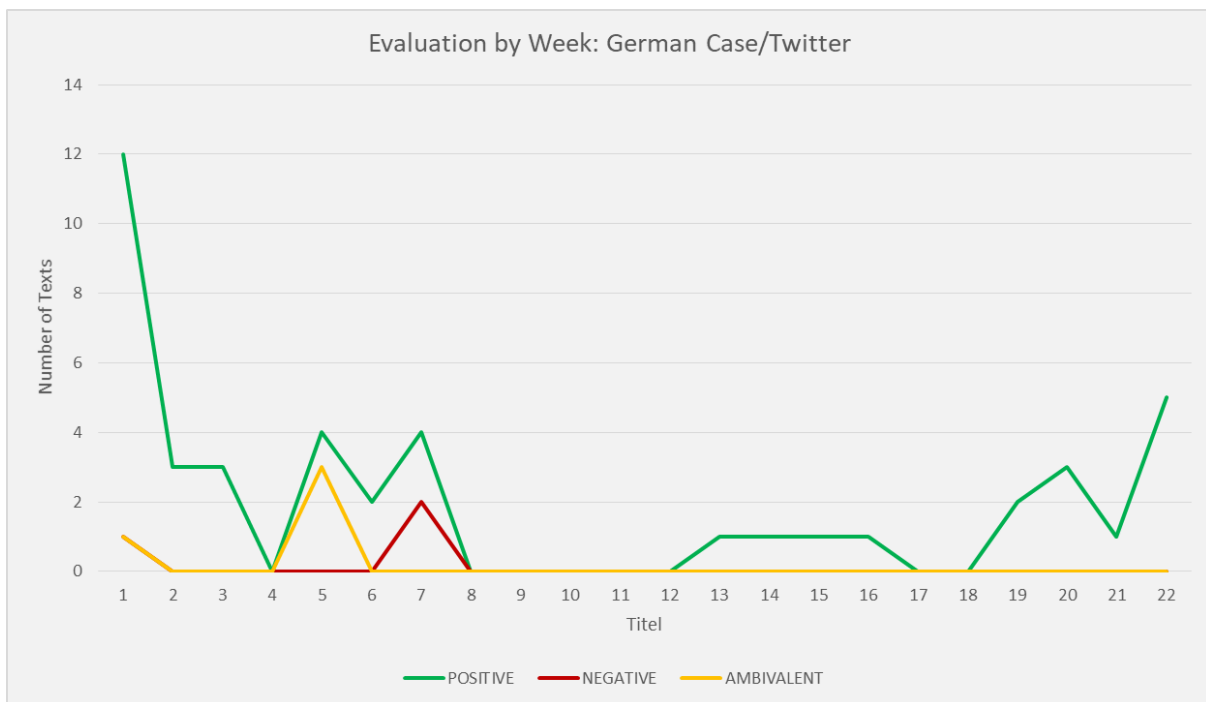
Figure 8 - Evaluations by Week on Twitter: German Case

8.1.3. Intermedia Comparison: Germany's Print Media and Twitter

In the German case, the total number of print media text items (n=185) was much larger than the total number of Twitter texts published (n=114) during the study. For both mediums, both print media and

Twitter, the number of items published declined over the five months of the study. This negative trend was more extreme for tweets than for print media; nonetheless, the trajectories develop in the same direction. Aside from the last four weeks of the study, the total outputs of print media and Twitter content does not seem to coincide very strongly.

The evaluations of both mediums roughly follow the course of the total output of text items. The majority of these were coded with a positive evaluation, clearly the dominant evaluation on both mediums. The trend of positive evaluations, being thus dominant, coincides with the temporal distribution of the evaluations. The positive evaluations on Twitter coincide (although not exactly) with positive evaluations in print media, with the exception of the week one. The rare occurrence of negative evaluations on Twitter are temporally far removed from those found in print media.

In both the print media and Twitter content, mobility, economic, and environmental frames were the most highly represented of the five focus frames, in that order. While the ratio of text items coded with the mobility frame was much higher for the print media texts (74.6%) than for the tweets (37.7%), the dominance of the frame was clear for both mediums. However, while the frequency of the mobility frame was balanced throughout the study in the print media (despite an overall decline in texts), on Twitter the frame showed an overall decline (see figures 4 and 7). The mobility frame experienced an observable drop in frequency during the middle of the study (weeks 9 through 13).

The economic frame was the second most frequently found frame in both mediums, and reached its highpoint within the first two weeks as well. After week two, the economic frame was only found again once on Twitter, while in the print media corpus it was represented numerous times, albeit with declining frequency. The environmental frame was rarely found in either the Twitter or the print media content; its occurrences on Twitter and in print media did not temporally coincide.

In sum, there were certain quantitative similarities between print media and Twitter in the German case. Both mediums showed decreases in frequency of texts throughout the course of the study. The focus frames on both media platforms in the German case were ordered similarly according to frequency, with mobility leading, then economics, environment, and the near absence of social/community and health/safety frames. The relative strength of the frames within their platforms are similar on both platforms, although the temporal distribution is more spread out in the print media, and clustered toward the beginning of the study on Twitter.

8.2. North American Case

The corpus for the North American case consists of 12,344 text items. Print media accounts for 386 of these, while the remaining 11,958 texts are from Twitter. The results of the content analysis coding for frames and evaluations are displayed in tables 4 for print media and 5 for Twitter. The temporal distribution of the North American corpus can be seen in figure 9. In the North American case, there were more text items published on Twitter than in print media by a large margin for the duration of the 22 weeks, without exception.
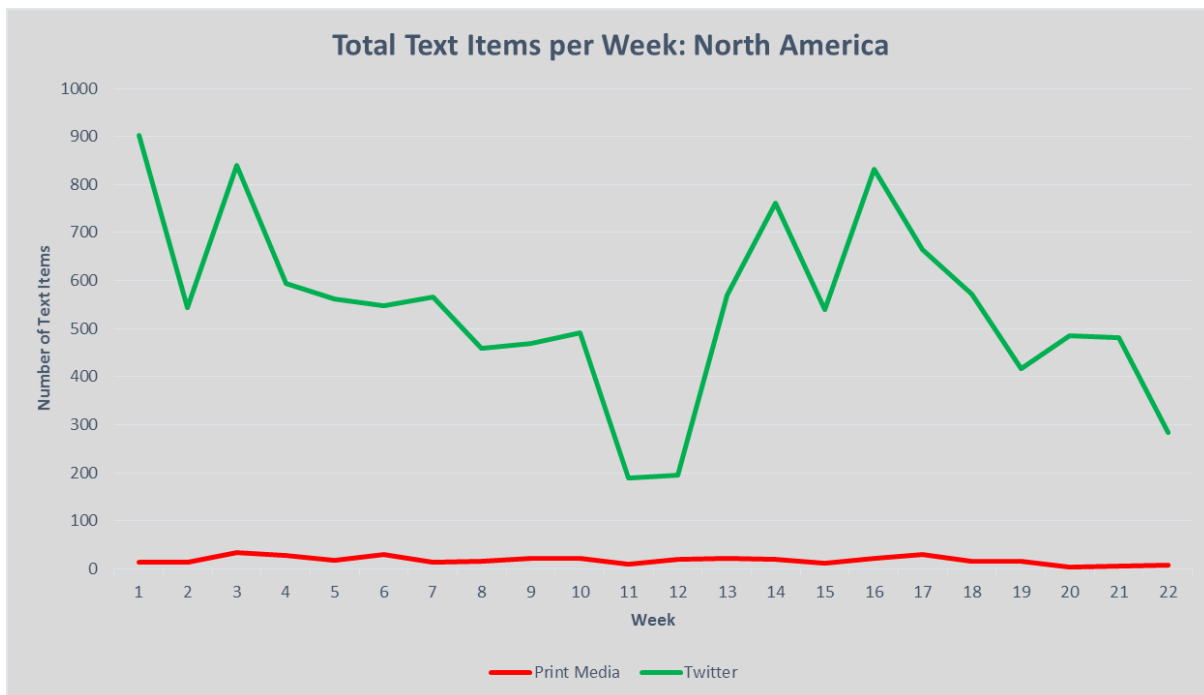
Figure 9 - Text Items per Week: North American Case

8.2.1. Print Media

The corpus of print media items analyzed for the North American case was composed of N=386 texts. The texts were largely positive in their portrayal of bikeshare, with 69.4% (n=268) of the text items showing a positive evaluation and only 8.0% (n=31) revealing a negative evaluation. 3.1% (n=12) were ambivalent in their evaluation, and 19.4% (n=75) did not indicate a clear evaluation of bikesharing. (See table 4)

In the North American case, the mobility frame was the strongest among the frames in the print media corpus, with almost half of the text items (48.2%; n=186) employing this frame. The runner-up was the economic frame, which was found to be employed in 31.6% (n=122) of the items. From there it is a significant jump to the third strongest frame, the environmental frame, which was used in 13.2% (n=51)

87

of the text items. The health/safety frame and the social/community frame are represented with the lowest frequency, with 6.7% (n=26) and 3.6% (n=14) respectively. 6.7% (n=26) of the print media items employed frames other than the five focus frames identified in the pilot study, and 7.0% (n=27) were unclear and not able to be coded with any frame.

Results of Quantitative Analysis of Print Media Texts:		Evaluation of print media frames			
NORTH AMERICA	No. of Print Media Items	Positive	Negative	Ambivalent	Unclear
Total	**386**	**268**	**31**	**12**	**75**
Frames⁺					
-Economic Frame	122	88	18	12	4
-Environmental Frame	51	48	0	0	3
-Health/Safety Frame	26	23	3	0	0
-Mobility Frame	186	121	4	3	58
-Social/Community Frame	14	10	4	0	0
-Other Frame	26	14	4	0	4
-Unclear*	27	22	0	0	6

Table 4 - Frames and Evaluations in Print Media: North American Case
⁺Frames may be >100% because some items were coded with more than one frame.

In table 4 and figure 9 it can be observed that the largest intersection of frames and evaluations is positive evaluations with mobility frames, this segment making up 31.3% (n=121) of the north American print media items. The next largest intersection in this sub-corpus is text items with a positive evaluation and economic frame. These text items account for 22.8% (n=88) of print media text items from the North American case. There were also a substantial intersection of positive evaluations and environmental frames, composing 12.4% (n=48) of the text items, followed by a small intersection of positive evaluations and the health/safety frame (6.0%; n=23). Negative evaluations were much less frequent. The largest intersection here was with the economic frame, accounting for 4.7% (n=18) of the text items, but nonetheless 14.8% of all texts with the economic frame.
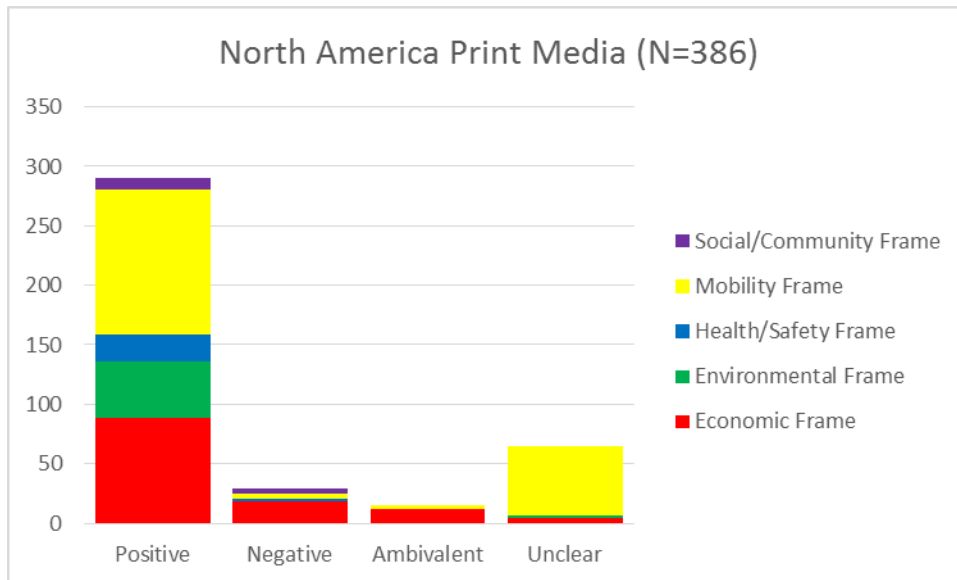
Figure 10 - Frames and Evaluations in Print Media: North American Case

The distribution of the frames over time can be seen in figure 11 in absolute terms (numbers of text items per week). These charts show that the mobility frame was the most dominant throughout large parts of the duration of the study. In five of the 22 weeks of the study, the economics frame was found in more text items than the mobility frame, and this occurred in only one week for the environmental frame; but these six weeks are the only exceptions where the mobility frame was not the strongest.

The economics frame, like the mobility frame, was represented fairly evenly throughout the duration of the study. The third strongest frame, the environmental frame, was employed more heavily during the first half of the study period. It lost strength in in the second half, with the exception of a peak in week 16. During the first six weeks, the health/safety frame was consistently present, if not strong, but only appeared in isolated occurrences during the rest of the study. The social community frame was the weakest of the five focus frames, and maintained this position with relative consistency for the duration.

Positive evaluation clearly dominated this subset of text items. There were more text items which evaluated bikesharing positively than negatively or ambivalently during every week of the study. This is shown in figure 12. Negative evaluations occurred more frequently during the first half of the study than in the second half, and while this trend may seem more apparent from the figure, the overall negative trend in the absolute frequency of positive evaluations is somewhat more extreme. This overall negative trend, however, can be expected in both tweets and print media, due to the overall decrease in text items from both platforms over the 22 week duration of the study (see figure 9).
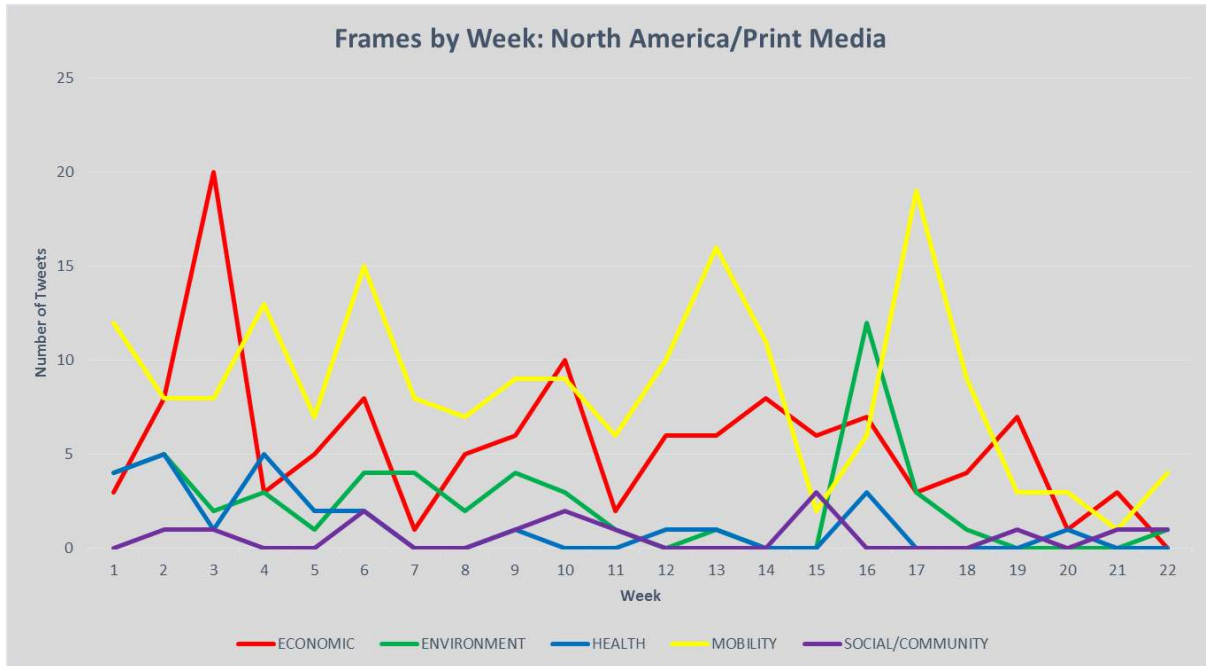
Figure 11 - Frames by Week in Print Media: North American Case
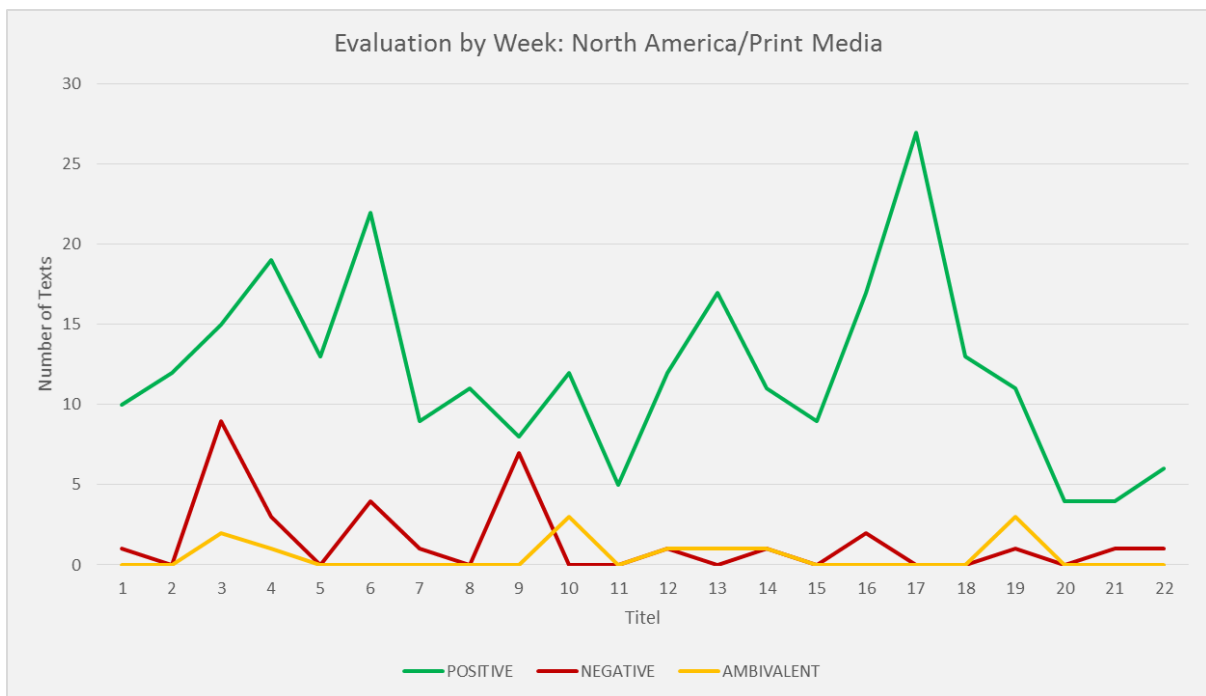
Figure 12 - Evaluations by Week in Print Media: North American Case

8.2.2. Twitter

The Twitter corpus for the North American case consisted of 11,958 tweets. Of these, 42.6% (n=5,098) had a clear positive evaluation of bikesharing, while only 3.0% (n=358) evaluated it negatively. 2.0%

(n=246) of the tweets were ambivalent about bikesharing. The majority of the tweets (52.3%; n=6,256) were unable to be coded as positive, negative, or ambivalent, and thus received the code of 'unclear.' (This may seem a high percentage, can be explained partially by the brevity or space restrictions determined by the medium, as well as the structure of communication which does not necessarily call for or make possible an evaluation of all subjects mentioned, nor necessarily encourage traditional speech acts.)

Of the five focus frames, the most frequent frame in this corpus was the mobility frame, being coded in 16.7% (n=1,999) of the tweets (see table 5). The second strongest frame of the five focus frames was the social/community frame, being employed in 5.2% (n=622) tweets, followed closely by the economic frame, coded in 4.5% (n=542) of the tweets. The health/safety frame was employed in 3.3% (n=398) of the tweets, with the environmental frame being the least frequent of the five frame categories, occurring in 1.6% (n=192) of the tweets. Tweets were used for functional purposes 9.8% (n=1,170) of the time, and the framing was unclear in 0.02% (n=29) of the tweets. The majority of the tweets (60.0%; n=7,170) were coded with the 'other' frame, indicating that they connected considerations to bikesharing that were not represented by the five focus frame categories.

Results of Quantitative Analysis of Twitter Texts:		Evaluation of tweet frames			
NORTH AMERICA	No. of Tweets	Positive	Negative	Ambivalent	Unclear
Total	**11,958**	**5,098**	**358**	**246**	**6,256**
Frames⁺					
-Economic Frame	542	299	29	20	194
-Environmental Frame	192	172	0	5	15
-Health/Safety Frame	398	219	40	80	59
-Mobility Frame	1,999	1,481	56	32	430
-Social/Community Frame	622	436	69	32	85
-Functional*	1,170	228	51	7	884
-Other Frame	7,170	2,397	118	75	4,580
-Unclear*	29	3	0	0	26

Table 5 - Frames and Evaluations on Twitter: North American Case
⁺Frames may be >100% because some items were coded with more than one frame.
*This 'frame' codes serve to explain what is happening with certain text items, but is not to be considered a frame in the sense of the other. In the 'other frame' cases, bikeshare was connected with some consideration, but not one of those identified as a main frame.

The largest intersection of evaluations and frames in the North American Twitter content among the five focus frames is positive evaluations with mobility framings, making up 12.4% (n=1,481) of all tweets from this case (see figure 13). Not considering unclear evaluations, this intersection is more than three times larger than the second largest intersection, positive evaluation with social/community frames, which add up to 3.6% (n=436) of all tweets for this case. The third largest intersection with a clear evaluation are those with a positive evaluation and economic framing, at 2.5% (n=299). Positive evaluation intersecting with the health/safety frame and environmental frame trail with 1.8% (n=219) and 1.5% (n=172), respectively. The negative and ambivalent evaluations did not accumulate any intersections with more than 1.0% of the tweets.
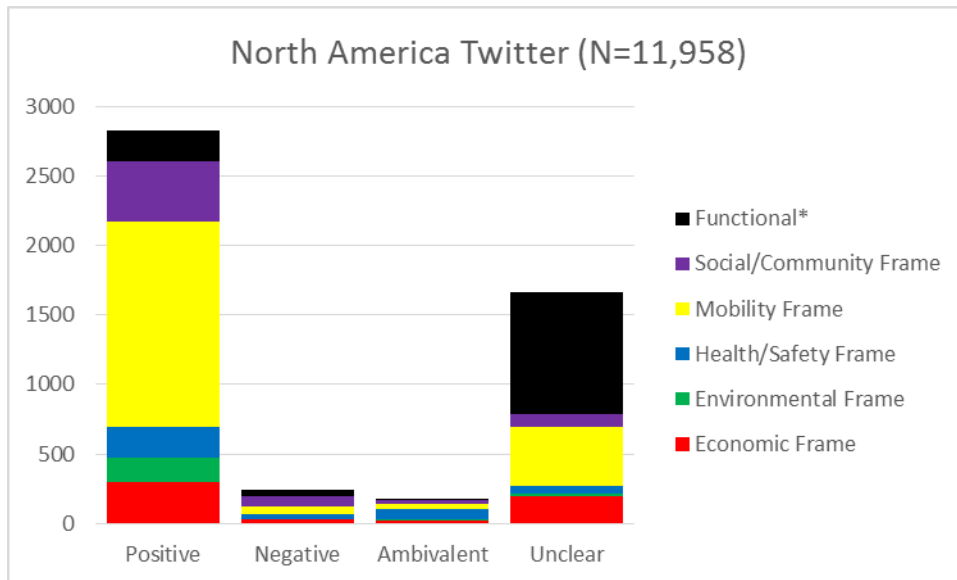
Figure 13 - Frames and Evaluations on Twitter: North American Case

Of the five focus frames, the mobility frame was the clear dominant frame, also over almost every week for the duration of the study, with one exception: in week 9, the economic frame was more frequently found on Twitter (see figure 14). Figure 14 also shows that the second most prominent frame in absolute terms, the social/community frame, maintained a consistent presence over entire course of the study. The third strongest of the five focus frames, the economic frame, was also somewhat consistently represented, although it also reveals more peaks and troughs, indicating punctual attention. The health/safety frame also displays consistence, the only major deviation was a peak towards the end of the study in week 20. Tweets with the health/safety frame had a relatively high amount of negative evaluations, 40 of these were coded as negative, while 219 (1.8% of the total tweets in this corpus) were coded with a positive evaluation (and 79 were coded with an ambivalent evaluation).

The evaluations over time (figure 15) do not reveal significant deviations from the general trend of their frequency (see figure 9). The negative evaluations show a slight increase in weeks 3 and 14, the latter of which also corresponds with the absolute numbers of tweets collected in that week, while week three shows a starker increase in negative tweets.
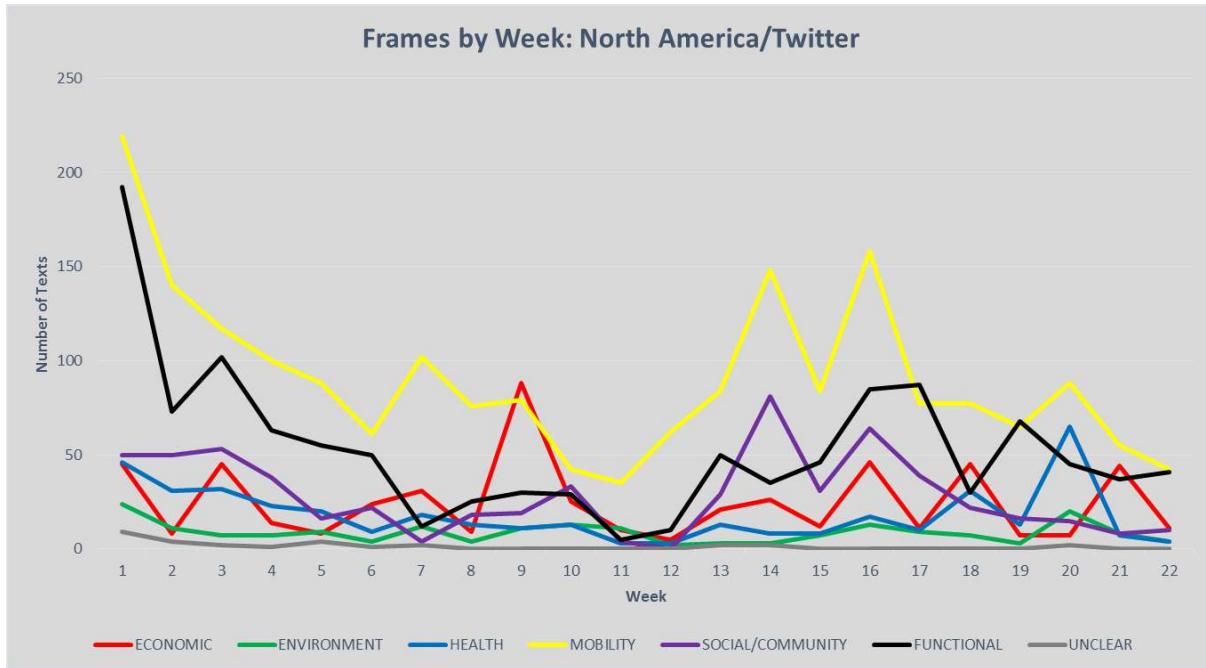
Figure 14 - Frames by Week on Twitter: North American Case
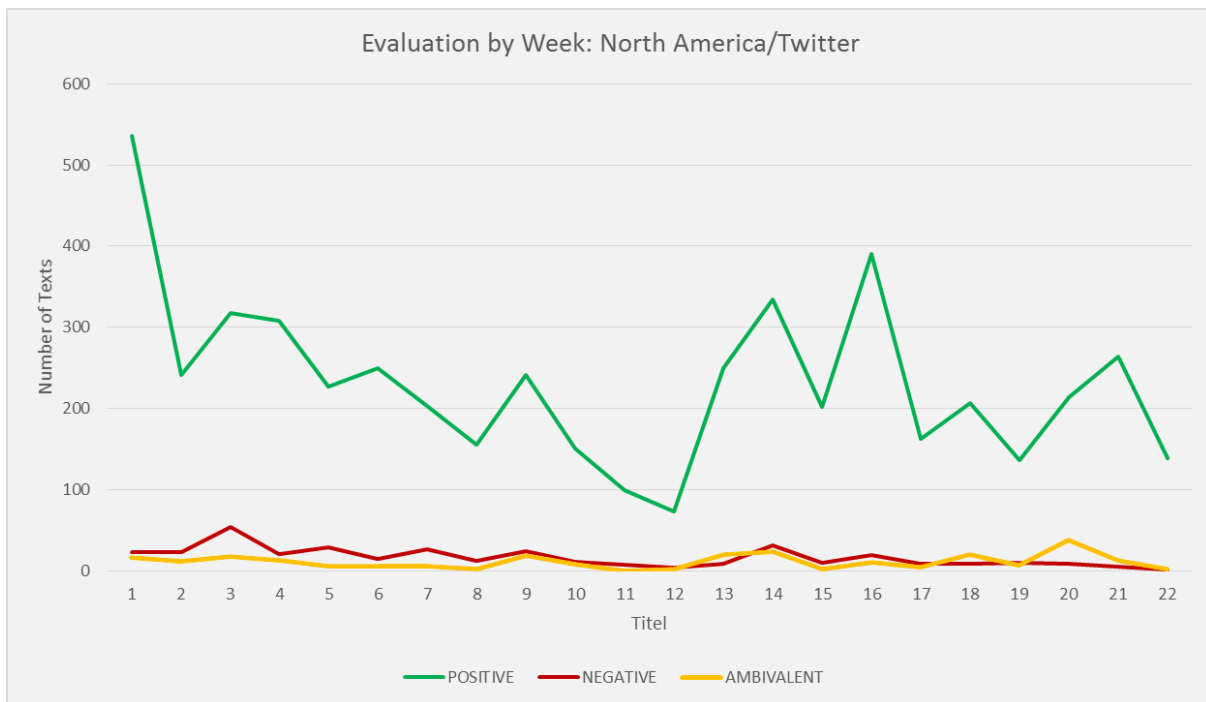
Figure 15 - Evaluations by Week on Twitter: North American Case

8.2.3. Intermedia Comparison: North America's Print Media and Twitter

The numbers of text items in the North American Twitter corpus (n=11,958) greatly exceeds that of the print media corpus (n=386). Both the frequency of print media and Twitter content declined in overall

terms as the study progressed, although the decline was steeper for the Twitter content. Both mediums shared a peak in texts in week three, and shared a trough in week 11. Aside from those two moments, there are no clear indications that the content on the two mediums experience similar trends.

The evaluations showed a certain similarity in that positive evaluations were the most frequent evaluations on both mediums by large margins. Negative evaluations were infrequent on both mediums but this was more substantial in print media, where 8.0% of texts evaluated bikesharing negatively, more than double the percentage of negative evaluations on Twitter at 3.0%. Ambivalent evaluations were very low on Twitter, but quite substantial in the print media.

The frequency of the evaluations over time does not suggest correlation. Both mediums showed peaks in negative evaluations in week three. In week three there was also a general peak in the number of text items in both mediums, however, the rise in positive evaluations in that week are not as strong as the overall output. The development of positive evaluations does not reveal strong similarities. Week 16, for example, shows a surge in positive evaluations on Twitter before dropping off in week 17, while week 17 on print media represents the largest peak in positive evaluations of the entire time period. The peak in positive evaluations in the print media corpus of week 17 correlates with the peak in mobility framing in the same medium, whereas the peak in positive evaluations on Twitter in week 16 correlated with rises in all of the five focus frames. The content from the Twitter corpus in week 16 is not reflected in the print media in week 17, suggesting little or no connection. The increased positive evaluations in print media in weeks four and six are similarly not represented in the Twitter content.

Aside from the mobility being the most frequent of the five focus frames on both mediums, Twitter and the print media are very different in how the issue of bikesharing is framed. The comparison of the five focus frames reveals the main and sole similarity is that the mobility frame was the strongest on both mediums. After that, the similarities in the rankings of the five focus frames stop. The second strongest frame in print media, the economic frame, was the third strongest frame on Twitter. The second most frequently employed frame on Twitter, the social/community frame, was the last ranked frame in print media. The health and safety frame came in fourth on both mediums.

Over time and with few exceptions, the two mediums both have in common that the highest rate of mobility framing throughout most of the study is the mobility frame. The local trends in the frame distributions do not indicate more than coincidental correspondence at best: peaks and troughs do not

align (see figures 11 and 14). Thus, a strong connection and spill-over of framing between the mediums is not assumed.

8.3. Spanish Case

There were 620 text items collected which make up the corpus for the Spanish case; 107 print media items and 513 tweets. The results of the quantitative content analysis are tallied up in tables 6 (print media) and 7 (Twitter). The weekly frequency for each type of text is displayed in figure 16. The figure shows that there was consistently more Twitter texts being published about bikesharing than print media texts, with the exception of weeks 11 and 12 (around the Christmas holiday), where activity on both platforms was lower than average and equal numbers of text items for both mediums were published.
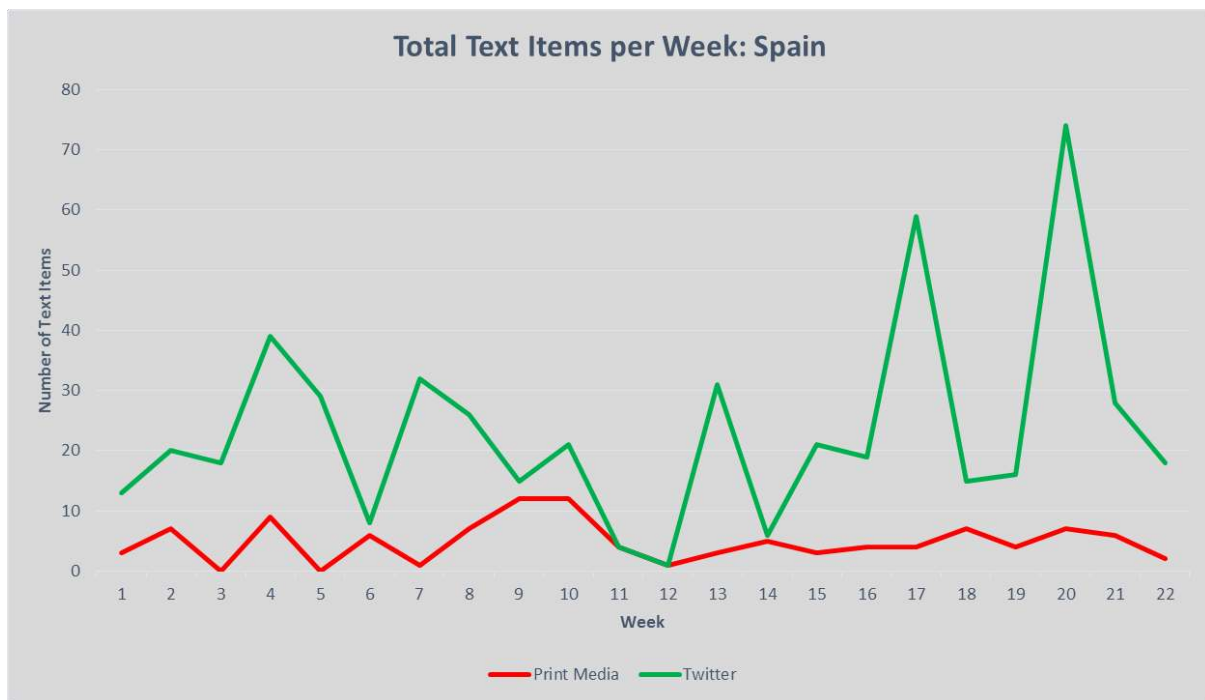
Figure 16 - Text Items per Week: Spanish Case

8.3.1. Print Media

For the Spanish case, 107 print media text items made up the corpus (table 6). Figure 16 shows that the highest frequency of print media texts occurred for two consecutive weeks (nine and ten) towards the middle of the study. On the whole, however, the print media texts were distributed quite evenly throughout the period of study; there is neither a substantial increase in text frequency nor a substantial decrease. A clear majority of the Spanish case's print media texts (76.6%; n=82) evaluate bikesharing as

positive. 8.4% (n=9) of the text items have a negative evaluation of bikesharing, and 11.2% (n=12) are ambivalent, while in 3.7% (n=4) of the texts an evaluation remained unclear.

The most frequently occurring frame found was the mobility frame, comprising 46.7% (n=50) of the print media items. The second most commonly used frame was the environmental frame, with 20.6% (n=22) of the texts, and the economic frame closely followed with 19.6% (n=21). Rarely occurring in the Spanish case were the health/safety frame (n=5), and the social/community frame (n=3). Other frames occurred in 20.6% (n=22) of the text items. Only one text (0.9%) was coded as unclear.

Results of Quantitative Analysis of Print Media Texts		Evaluation of print media frames			
SPANISH CASE	No. of Print Media Items	Positive	Negative	Ambivalent	Unclear
Total	**107**	**82**	**9**	**12**	**4**
Frames⁺					
-Economic Frame	21	18	1	2	0
-Environmental Frame	22	22	0	0	0
-Health/Safety Frame	5	1	2	2	0
-Mobility Frame	50	36	4	10	0
-Social/Community Frame	3	3	0	0	0
-Other Frame	22	14	4	1	3
-Unclear*	1	0	0	0	1

Table 6 - Frames and Evaluations in Print Media: Spanish Case
⁺Frames may be >100% because some items were coded with more than one frame.

The results show that in the Spanish case, the largest intersection of evaluations and frames is the group of positive evaluations and mobility frames, accounting for 33.6% (n=36) of the print media texts (see table 6 and figure 17). The two next largest intersections were also substantial: 20.6% (n=22) texts had positive evaluations of bikesharing and environmental frames, while 16.8% (n=18) revealed positive evaluations and the economic frame. Following that, texts with ambivalent evaluation and the mobility frame were the next largest group with 9.3% (n=10). The further intersections made up smaller segments with less than 4% of the texts.
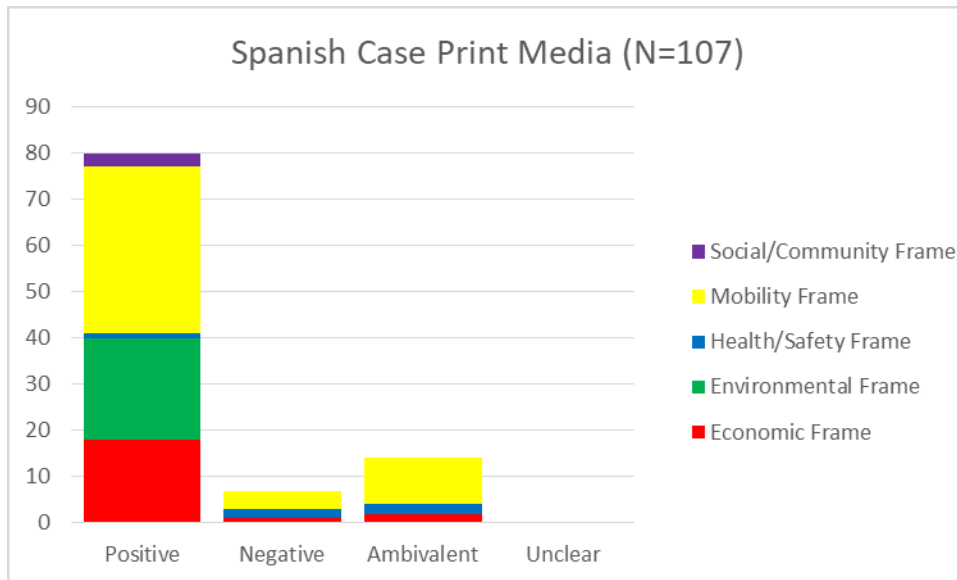
Figure 17 - Frames and Evaluations in Print Media: Spanish Case

Figure 18 shows the development of the five focus frames during the duration of the study in absolute numbers of text items. The strongest overall frame in the Spanish print media, the mobility frame, maintains its dominance in all but five weeks of the study (weeks 1, 8, 9, 14, and 20). The second and third strongest of the five focus frames, the environmental and economic frames, are the only ones that surpass the mobility frame in any given moment.

While the mobility frame has a somewhat consistent representation over the time of the study, the environmental frame is mainly clustered around weeks nine and 14. The economic frame also displays three irregular prominence, with clusters around weeks eight and nine, and weeks 20 and 21. The other frames are rare enough that their occurrence cannot be interpreted to suggest any trends.
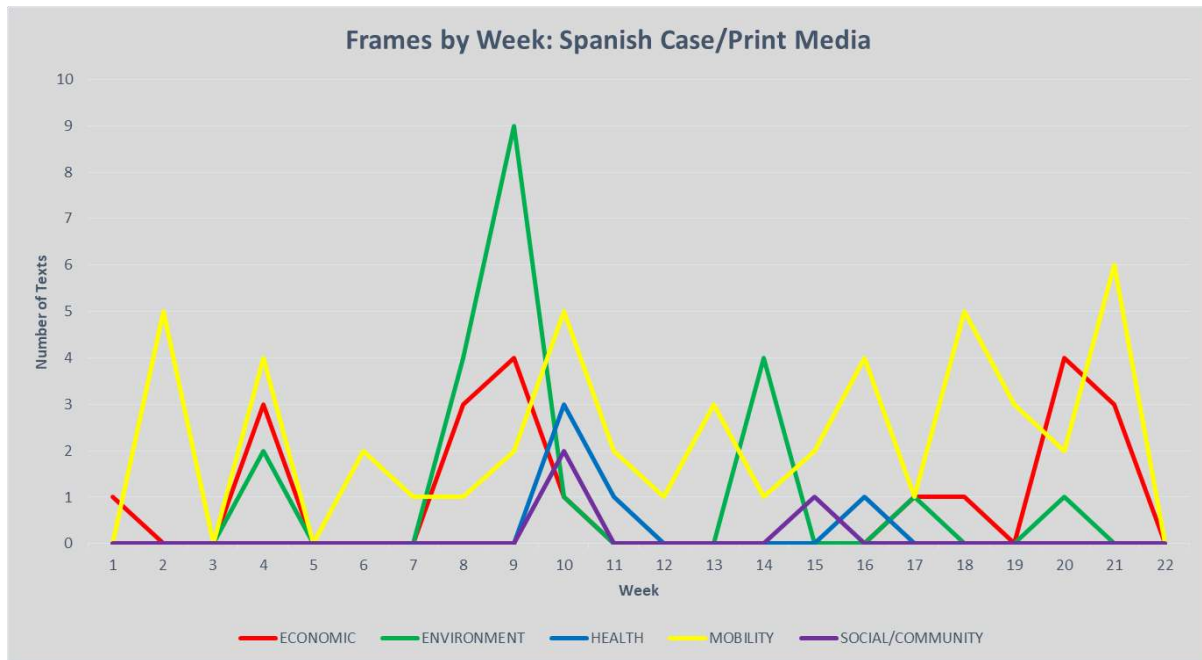
Figure 18 - Frames by Week in Print Media: Spanish Case

The largest peak in any evaluation found in the Spanish print media corpus is during week nine (see figure 19), which corresponds to the peak of the environmental frame in the same week. Contrary to the health/safety, mobility, and economic frames, the environmental frame was solely employed in conjunction with a positive evaluation. Further, in the weeks with text items, texts with a positive evaluation of bikesharing occurred more frequently than the other evaluations with the exceptions of week one, where the negative evaluation was the only one represented, and week 18, where the ambivalent evaluation occurred twice as often as the positive evaluation.

In sum, the Spanish print media portrays the issue of bikesharing positively. The positive evaluations are distributed among three frames, which are also the main frames employed overall: mobility, environment, and economic frames (in that order).
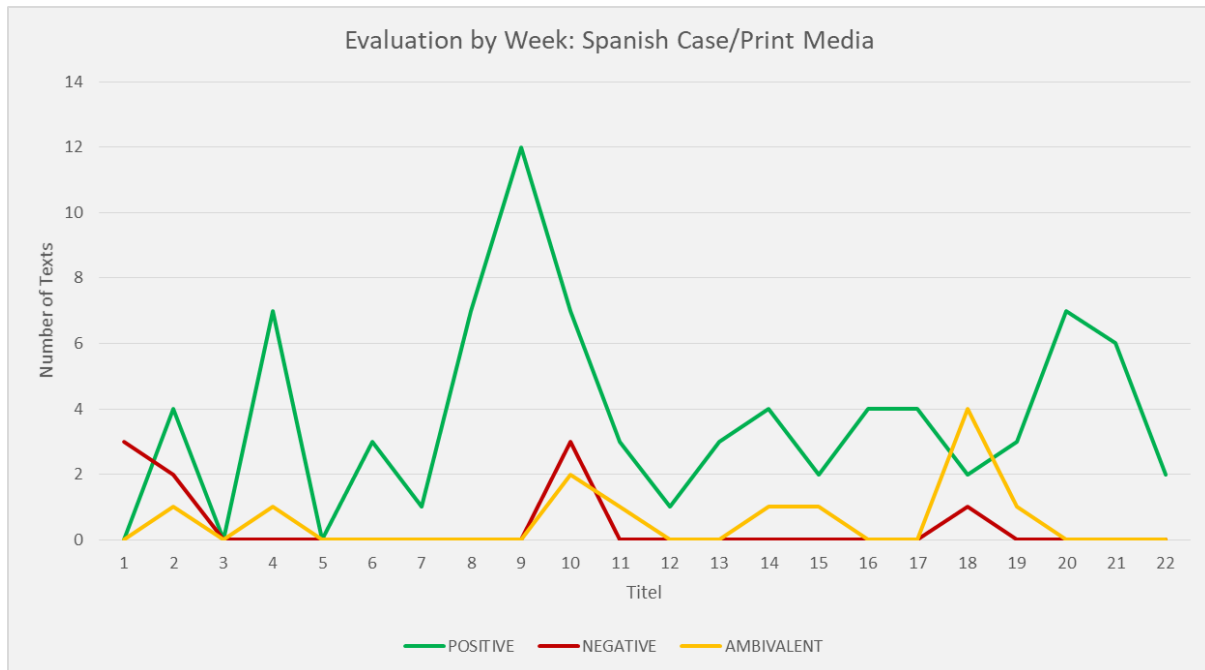
Figure 19 - Evaluations by Week in Print Media: Spanish Case

8.3.2. Twitter

The Twitter content making up the corpus in the Spanish case consisted of 513 tweets. The amount of tweets increased in frequency over the course of the study. There were two weeks with exceptionally high Twitter activity in weeks 17 and 21 of the study, as can be seen in figure 16. Of these, 40.0% (n=205) had a positive evaluation of bikesharing (see table 7). Tweets which portrayed bikesharing negatively made up 9.7% (n=50) of the corpus, and 1.2% (n=6) were ambivalent in their evaluation. Again, as in the Spanish case, a large proportion, 49.1% (n=252) of the tweets did not take a clear stance in terms of approval or not of bikesharing.

The economic frame was the strongest frame in the Spanish Twitter content, being found in 19.9% (n=102) of the tweets. The mobility frame came in second, occurring in 12.9% (n=66) of tweets. The environmental frame was used in 3.9% (n=20) tweets, the social community frame in 1.2% (n=6), and the health/safety frame 1.0% (n=5) of the Spanish tweets. 3.3% of the tweets were coded as having a functional purpose, none (n=0) were unclear. Other frames were used in 59.5% (n=305) of the tweets.

Results of Quantitative Analysis of Twitter Texts		Evaluation of tweet frames			
SPANISH CASE	No. of Tweets	Positive	Negative	Ambivalent	Unclear
Total	**513**	**205**	**50**	**6**	**252**
Frames⁺					
-Economic Frame	102	15	2	2	83
-Environmental Frame	20	19	0	0	1
-Health/Safety Frame	5	1	3	1	0
-Mobility Frame	66	33	25	0	8
-Social/Community Frame	6	5	1	0	0
-Functional*	17	3	1	0	13
-Other Frame	305	136	18	3	148
-Unclear*	0	0	0	0	0

Table 7 - Frames and Evaluations on Twitter: Spanish Case
⁺Frames may be >100% because some items were coded with more than one frame.
*This 'frame' codes serve to explain what is happening with certain text items, but is not to be considered a frame in the sense of the other. In the 'other frame' cases, bikeshare was connected with some consideration, but not one of those identified as a main frame.

In the Spanish Twitter corpus, the largest intersection of tweets which contained one of the five focus frames was those with an unclear evaluation and an economic frame (16.2% of tweets, n=83).[5] The second through fifth largest intersections with the five focus frames all include a clear evaluation: positive evaluations and mobility frames, with 6.4% (n=33) of the tweets; a negative evaluation with the mobility frame, found in 4.9% (n=25) of the tweets; positive evaluation and the environmental frame, with 3.7% (n=19) of the tweets, and positive evaluations and economic framing, making up the fifth largest intersection with 2.9% (n=15) of the Spanish Twitter corpus (see also figure 20).

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[5] The reason for the large size of tweets coded with the economic frame and an unclear evaluation is due to the bulk of Twitter activity surrounding the sponsorship of London's bikeshare program by Santander Bank. While some of the tweets on this issue were coded with a positive frame when the agency of the bank was included in the tweet, because this then showed it to be desirable to fund the bikeshare program. However, when the event was described without attributing agency to the bank, but rather just that the bank is now or will be the sponsor, the tweets were coded with an 'unclear' evaluation. 64 of the 83 tweets making up the intersection of tweets with the economic frame and an unclear evaluation are about this event. For more on this, refer to the qualitative analysis and discussion sections.
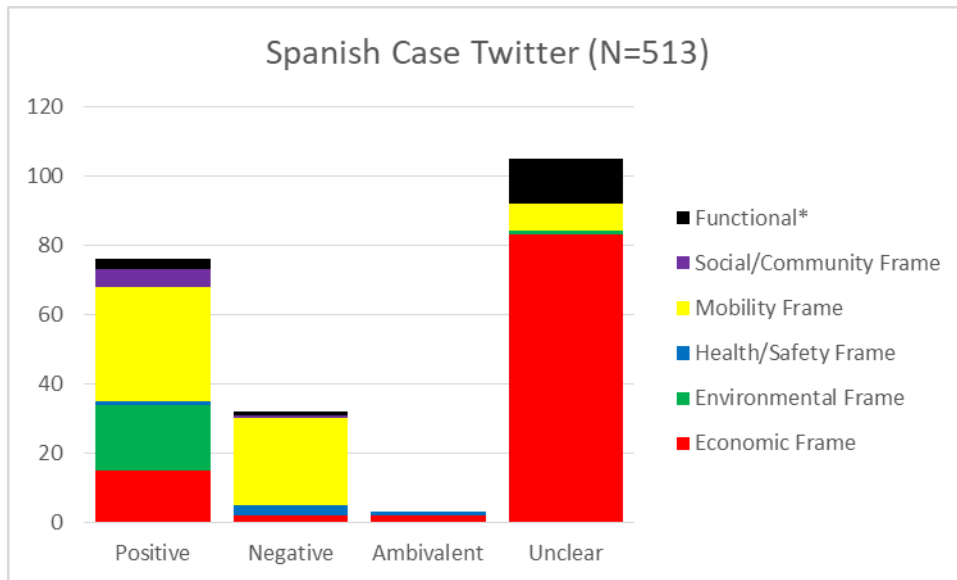
Figure 20 - Frames and Evaluations on Twitter: Spanish Case

Looking at the distribution of tweets over time, it becomes clear that the majority of the tweets employing the economic frame, the most prominent of the five focus frames by sheer numbers, are concentrated in week 17. Indeed of the 102 tweets employing the economic frame, 54 of them were published in week 17. Figure 21 shows, that with another few smaller clusters taking place in the latter half of the study, and minimal occurrence during the first half, the economic frame gained significantly in representation throughout the duration of the study. The next largest frame, the mobility frame, shows two substantial clusters during the first half of the study, around weeks three and eight, and then is somewhat more evenly distributed in the second half, after a dip in representation in the middle. While the third most commonly occurring frame, the environmental frame, showing a more constant frequency in both halves of the study, the first half of the study period was dominated by the mobility frame, and the second half by the economic frame.
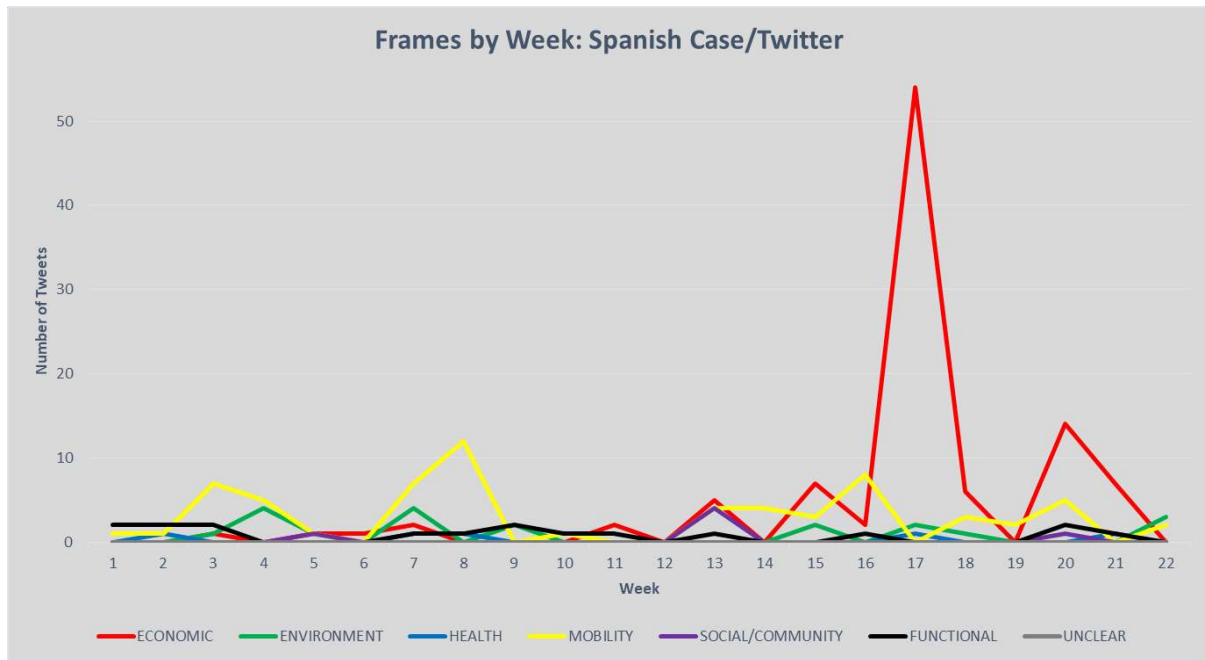
Figure 21 - Frames by Week on Twitter: Spanish Case

Positive evaluations dominated throughout the duration of the study. The one exception to this was week 8, where there were more negative than positive evaluations. The evaluations shown by week in figure 22 show that positive evaluations increased as time passed, while the frequency of negative evaluations decreased. Ambivalent evaluations were minimally represented throughout. There is no peak in clear evaluations corresponding to the large concentration of economic frames around week 17, mainly because many of these tweets employing the economic frame were coded as having an unclear evaluation. Week 20 shows a concentration of positive evaluations.
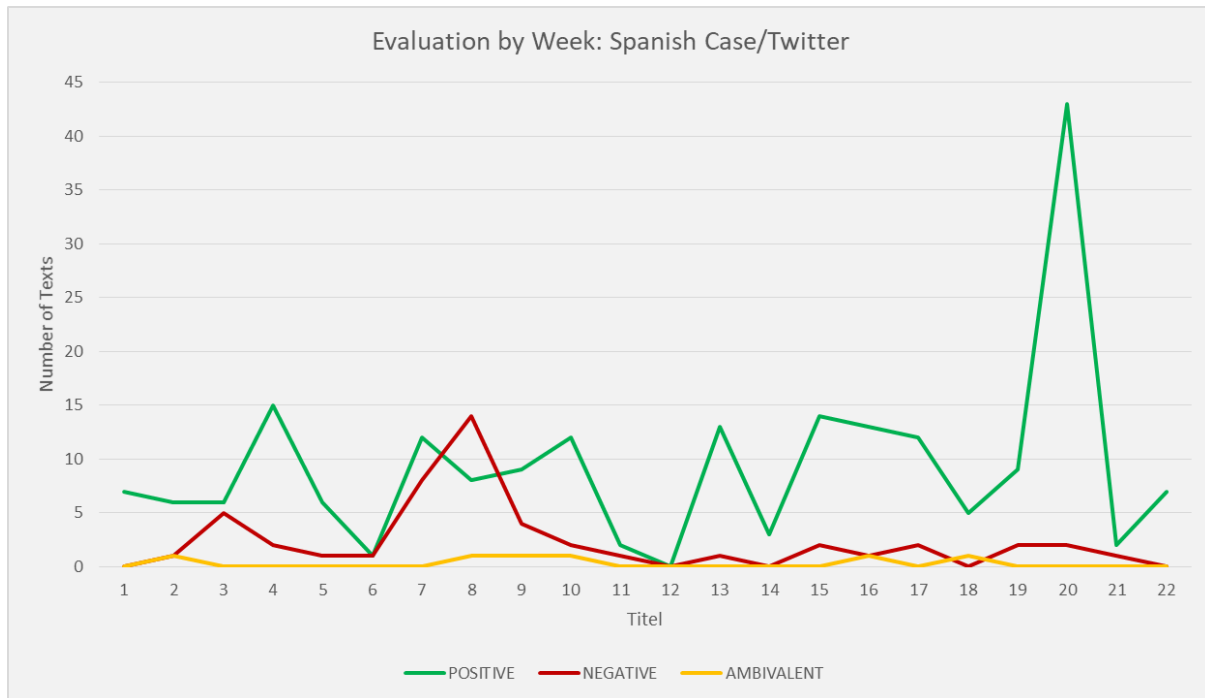
Figure 22 - Evaluations by Week on Twitter: Spanish Case

8.3.3. Intermedia Comparison: Spanish Print Media and Twitter

The Spanish case reveals larger amount of texts being produced on Twitter than in print media (tables 6 and 7), and this throughout the duration of the study. Both mediums experienced a slump in output over weeks 11 and 12, where they each produced a small number of texts (4 per medium in week 11, 1 per medium in week 12). While Twitter shows an overall increase in activity (text production), print media remained quite constant over the course of the study. The development activity appears to follow a similar trend for the first five weeks of the study, after which few commonalities are observable.

The dominant clear evaluation on both mediums was positive. Nonetheless, it should be noted that the Twitter content (40% positive; 9.7 % negative) contained a much higher ratio of negative to positive evaluations when compared with print media (76% positive; 8.4% negative). Each medium had one week where there were negative evaluations of bikesharing recorded exceeded positive evaluations. Otherwise both mediums consistently showed positive evaluations on top (with the small exception of print media in week 18, where there were more ambivalent evaluations).

The distribution of the frequency of evaluations reveals limited correspondence. While the positive frames shared some peaks, such as in week 4 and week 20, the negative evaluations did not coincided temporally with one another at all. The ambivalent evaluation was nearly absent on Twitter, thus no common developments are observed between the mediums for that evaluations either.

Considering the text items coded with (at least) one of the five focus frames and a clear evaluation, the distribution of the frame frequency looks quite similar, with the exception of the larger intersections of negative evaluations with the mobility frames in the Twitter corpus (compare figures 17 and 20). The distribution of text items of the five focus frames with the positive evaluation are quite similar for both mediums.

Although the overall distribution of frames shows similarities, the temporal distribution of frames reveals differences and discrepancies in the framing of the issue of bikesharing. In the print media, the mobility frame was consistently the strongest frame: this frame was used more than the other five focus frames in 17 of 22 weeks. The remaining five weeks were divided between the environmental frame (strongest in three weeks) and the economic frame (strongest in two weeks). The distribution, however, does not show a clear change in trends of frame strength, which are relatively balanced (in the case of the stronger mobility, environmental, and economic frames) or simply sporadic (as in the infrequent health/safety and social/community frames). The temporal distribution of the five focus frames on Twitter, however, indicates a shift in frame dominance. While the economic frame was infrequent in the first half, it grew significantly and emerged as the strongest frame by a large margin in the second half of the study.

Coinciding jumps in frame frequency are not readily apparent between the two mediums. The economic frame saw a jump in activity on both mediums in week 20, but that was the extent of any convergence in frequency for that frame. While the frequency of the economic frame saw a dramatic increase on Twitter during the second half of the study, more than half of the examples of the economic frame in print media were found during the first half of the time period. The one example of similar trends in the mobility frame is in week 16, although this is not the most prominent surge of activity on that frame for either medium. The large spike in the environmental frame in print media in week nine was not matched, nor directly preceded or followed by environmental frame activity on Twitter.

8.4. Cross Case Comparison: Framing Bikesharing in Three Cultural Contexts

8.4.1. Text Output

In total, 13,263 text items were coded from all three cases (see table 1). The vast majority of these (94.9%) were texts from Twitter. Both the North American and the Spanish case tallied more text items on Twitter than from print media. The difference was largest in the North American case, where there were 31 times more tweets than print media items. In the Spanish case, there were 4.8 times as many tweets as print

media items. The German case showed the opposite, more print media items than tweets. For every Tweet in the German case, there were 1.6 print media articles.

The development of text output over time differed between the cases. As indicated in the previous section, both mediums showed an overall decrease in output by the end of the study in the German and North American cases, and an overall increase in the Spanish case. There was no case where print media and Twitter content developed overall in opposite directions in terms of the number of text items being produced. Both the German and North American cases experienced a decline in text production on both mediums, and in both cases, the decrease in Twitter activity was sharper than the decrease in print. (See table 8 for the coefficients of the regression lines for text output on time.) The Spanish case showed a different development: both mediums increased their output over the course of the study. However, the overall increase for the print media was very slight (see table 8).

Case/Medium	Regression equation
German Case	
print media	y = -0,2513x + 11,299
tweets	y = -0,4946x + 10,87
North America	
print media	y = -0,5342x + 23,688
tweets	y = -9,4839x + 652,61
Spanish Case	
print media	y = 0,004x + 4,8182
tweets	y = 0,6059x + 16,351

Table 8 - Best-fit lines for plots of number of texts on time

8.4.2. Structural Characteristics of the Twitter Corpus

The structural characteristics of the Twitter corpus also provides insight into how the two mediums interact, and how this varies across cases. Figure 23 shows formal characteristics of the Twitter content for each case culture. Displayed are five characteristics: 1) Links – how many tweets contained links to content elsewhere on the internet, 2) Hashtags – how many tweets contained one or more hashtags, 3) User media – how many tweets contained media that the twitterer attached to the tweet (usually images, but also video and/or audio), 4) Retweets – how many tweets were retweets (reposting or rebroadcasting another's tweet), and 5) @mentions – how many tweets mentioned another Twitter account. The

category of @mentions excludes the mention of the user's name in a retweet, because the retweet function includes the Twitter handle of the original tweeter.

In all three case cultures, the majority of tweets contained references in the form of links to content not contained in the tweet itself, but vary in the size of the majority. 81% of the Tweets in the German case, for example, contained a link (or more than one link) to another source, referencing content elsewhere on the internet. This is much higher than the North American case, where only 55% of the tweets contained links. The Spanish case is in between, with 71% of the Tweets containing links.

Further, looking at figure 23 it becomes apparent that user media is much less common in the German case than the other two cases. The use of hashtags and @mentions is also much more common in the North American case than in the other two, and the Spanish case shows the highest ratio of retweets.

There were also differences in the way tweets were used depending on the frame. In the Spanish case, while 90 of the 102 tweets (88%) coded with the economic frame from the Spanish case contained links to other websites, only 9 of the 20 tweets (45%) coded with the environmental frame did. In the North American case, however, the differences in tweets containing links compared by frame showed nowhere near as much difference as the example in the Spanish case.
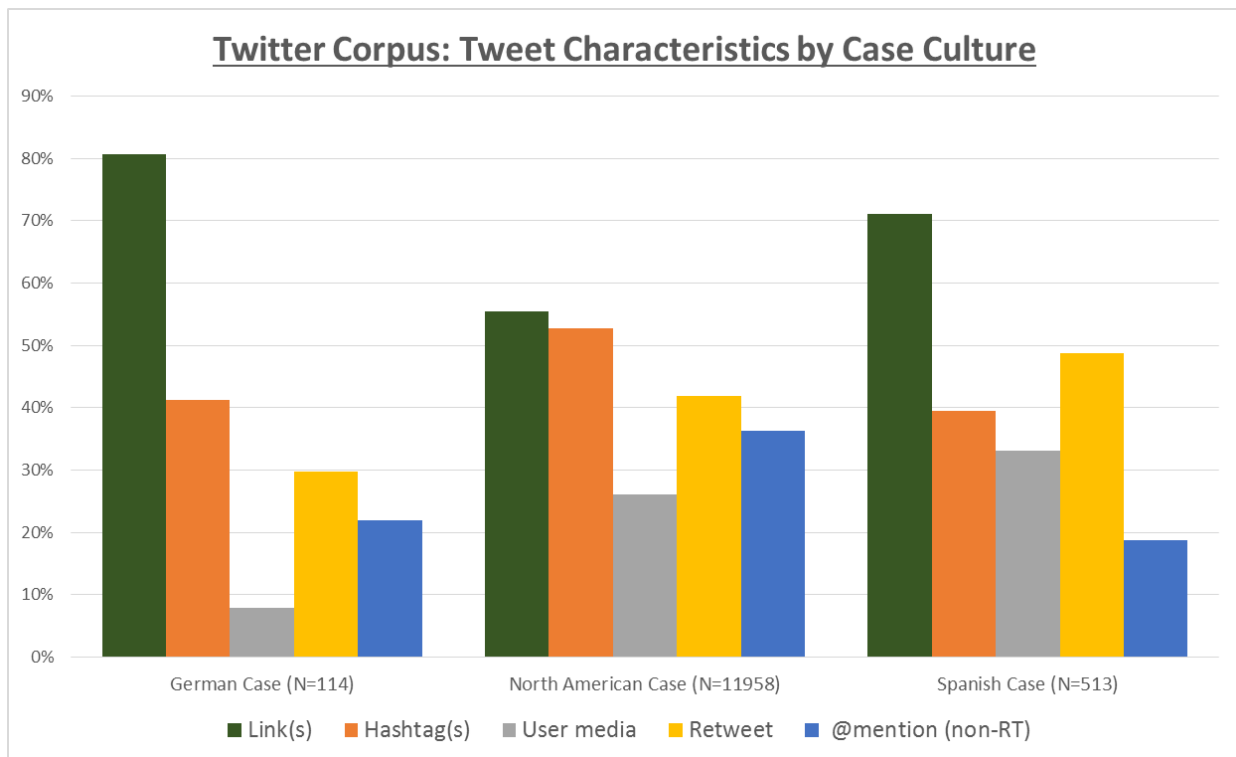
Figure 23 - Tweet Characteristics by Case

8.4.3. Actor Analysis

8.4.3.1. Print Media

For the print media corpus, the actors producing the texts are clear. Media organizations are responsible for all of the content. With the exception of some newswires, newspaper articles make up the print corpus. In the German case, the Newswires were *OTS Detuschland* (a service of the *Deutsche Presse Agentur*), *Agence France Presse*, and *Schweizer Depeschenagentur*. For the North American case, the only newswire that yielded content for the print media corpus was *US Official News* (a service of *Plus Media Solutions*). For Spain this includes *EFE Newswire, Europa Press* services.

8.4.3.2. Twitter

It is much less clear who the actors are who contributed text items that made up the Twitter corpus. Therefore, an analysis of a sample of the Twitter handles was conducted to identify the actor types taking part in the discussion captured in the Twitter corpus. The categories for the actor types were the following: Citizens and Civil Society, (acting) Politicians and Government, Journalists and Media Institutions, Bikeshare Operators, and Business and the Private Sector. There were 108 unique contributors captured in the German Twitter corpus, 6,306 unique contributors in the North American case, and 402 unique contributors to the Twitter corpus in the Spanish case. For the North American and Spanish Cases, the top 60 contributors determined by the number of tweets posted were analyzed on the basis of their profile description and categorized according to the aforementioned actor types. As the German case only had six Twitter accounts that contributed more than one tweet, these top six were explicitly drawn into the sample along with half of the remaining contributors who posted only one tweet captured in the corpus (every second twitterer based on an alphabetized list of the Twitter handles responsible for posting one tweet in the German corpus).

The results of the actor analysis are displayed in table 9. The category 'operator' was included in the analysis to differentiate the bikeshare operators from civil society, government, or business, categories which would all be partially applicable depending on the program. Capital Bikeshare of Washington D.C. (the top Twitter contributor), for example is a public private partnership, while Social Bicycles Hamilton, (the fourth most frequent contributor) is a non-profit organization operating bikeshare with hardware leased from Social Bicycles (a New York based company) at the request of the city and a large local university.

Actor Type	North American Case	Spanish Case	German Case
Citizen/Civil Society	40.4%	51.5%	51.6%
Politician/Government	10.6%	4.3%	8.1%
Journalist/Media Institution	5.8%	10.4%	12.9%
Operator	36.9%	0.0%	0.0%
Business/private sector	6.4%	33.7%	27.4%

Table 9 - Actors: Authors of Tweets Categorized by Case

8.4.4. Evaluations of Bikesharing across Three Case Cultures

Of the corpus as a whole (all three cases and all texts), the most commonly found evaluation of bikesharing was a positive evaluation, found in 43.9% of all text items coded. A negative evaluation was coded in 3.5% of all texts. The discrepancy between print and Twitter is substantial, with 70.5% of print media items revealing a positive evaluation, as opposed to 42.5% of tweets. Negative evaluations were found in 7.1% of print texts and in 3.3% of tweets. Overall, 2.4% of the entire corpus was found to have an ambivalent evaluation of bikesharing; this was higher in print (8.6%) than Twitter content (2.0%). While it was possible to clearly identify an evaluation in the vast majority of print media text items (86.1% were either coded with positive, negative, or ambivalent evaluations), the identification of a clear evaluation was only possible in 47.8% of Twitter items. 52.2% of tweets were thus given the code of 'unclear evaluation.'

The German case (both mediums) shows the highest ratio of positive evaluations at 57.5%. This is followed by the Spanish case, with 46.3% of that corpus coded with a positive evaluation, and the North American case with the lowest percentage of positive evaluations at 43.5% of texts from both mediums. Leading the list on negative evaluations, the Spanish case has 9.5% of texts evaluating bikesharing negatively. The other two cases revealed much lower ratios of negative evaluation, at 3.3% in the German case and 3.2% in the North American case. For ambivalent evaluations, the German case shows the largest departure from the average of 2.4% with 12.7% of text items showing an ambivalent evaluation. The North American and Spanish cases were closer to the average, with 2.1% and 2.9% ambivalent evaluations, respectively.
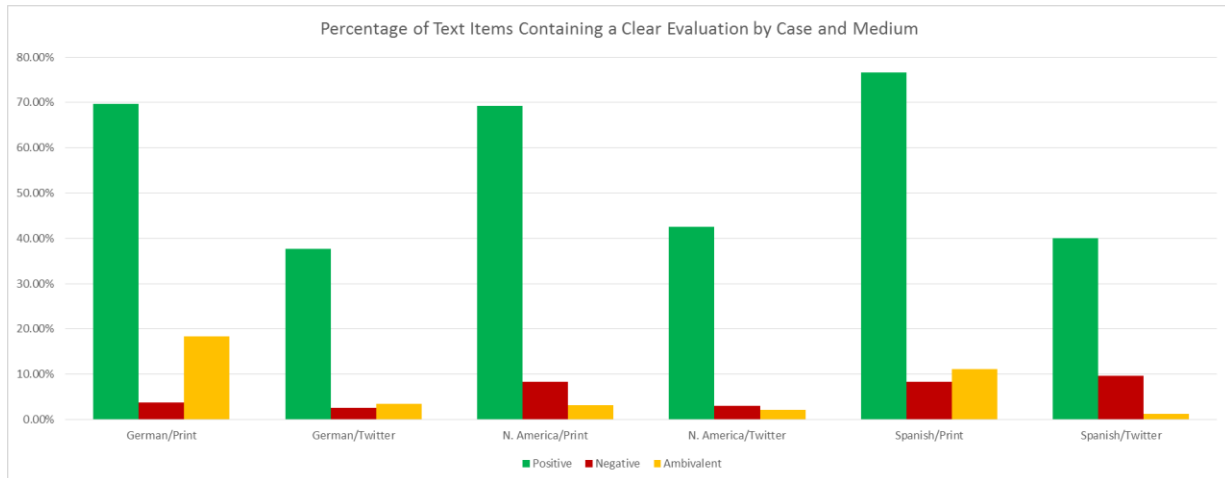
Figure 24 - Evaluation of Bikesharing by Case and Medium
(Items with an unclear evaluation of bikesharing are not represented in this table.)

The evaluation of bikesharing by platform does not vary greatly between the cases (see Table 2). Across the board, the majority of print media items were coded as having a positive evaluation, while the tweets with a clear positive evaluation lingered around 40%.

In all three cases the percentage of texts with a positive evaluation was higher in the print content than in the Twitter content. (See figure 24 for a breakdown of clear evaluations by case/medium.) The largest discrepancy is to be found in the Spanish case, where print media employs positive evaluations 36 percentage points more than Twitter. In negative evaluations, the Spanish case leads in both mediums. North American Print media closely follows with its own print media, but there the percentage of negative evaluations found on Twitter is much lower than in print. Only in the Spanish case is the percentage of negative evaluations is higher on Twitter than in print media.

Ambivalent evaluations were low (3.5% or below) in all cases for Twitter. In print media, there is substantial differentiation, with North American print media showing only 3.1% ambivalent evaluations, while it was 11.2% in the Spanish case, and 18.4% in the German case. Across all cases, the proportion of ambivalent codes attributed to print media texts were higher than Twitter, although the size of this difference varied from 16.6 percentage points in the German case to one percentage point in the North American case (see table 10 or appendix 4 for absolute numbers).

Case/Medium	Positive	Negative	Ambivalent	Unclear Evaluation	Total of Case/Medium	% of Total Text Items (n=13,263)
All cases (All Texts)	***43.9%***	***3.5%***	***2.4%***	***50.3%***	<u>***100.0%***</u>	*100.0%*
All Cases/Print	*70.5%*	*7.1%*	*8.6%*	*13.9%*	*100.0%*	*5.1%*
All Cases/Twitter	*42.5%*	*3.3%*	*2.0%*	*52.2%*	*100.0%*	*94.9%*
German (All Texts)	**57.5%**	**3.3%**	**12.7%**	**26.4%**	<u>**100.0%**</u>	2.3%
German/Print	69.7%	3.8%	18.4%	8.1%	100.0%	1.4%
German/Twitter	37.7%	2.6%	3.5%	56.1%	100.0%	0.9%
N. America (All Texts)	**43.5%**	**3.2%**	**2.1%**	**51.3%**	<u>**100.0%**</u>	93.1%
N. America/Print	69.2%	8.3%	3.1%	19.4%	100.0%	2.9%
N. America/Twitter	42.6%	3.0%	2.1%	52.3%	100.0%	90.2%
Spanish (All Texts)	**46.3%**	**9.5%**	**2.9%**	**41.3%**	<u>**100.0%**</u>	4.7%
Spanish/Print	76.6%	8.4%	11.2%	3.7%	100.0%	0.8%
Spanish/Twitter	40.0%	9.7%	1.2%	49.1%	100.0%	3.9%

Table 10 - Evaluations of Text Items by Case and Medium (%)

For all cases and mediums, positive evaluations were not only most frequent overall, but also at most moments throughout the study. Only the Spanish case shows the number of negative evaluations breaching the number of positive evaluations during one week each for either medium (but different weeks). Aside from the temporal dominance of positive evaluations, a comparison of evaluations over time across the cases does not indicate any clear similarities between the cases.

8.4.5. Framing of Bikeshare across Three Case Cultures

Of the five focus frames, the mobility frame was found most frequently. In all three cases, the percentage of texts with the mobility frame was higher in the print media than on Twitter by a large margin (see table 11, or appendix 4 for absolute numbers). The Spanish case was the only example where the mobility frame was not strongest of the five focus frames on both mediums: though the mobility frame was the strongest from the print media complex, the economic frame accounted for a higher percentage of tweets than the mobility frame.

The second most frequent of the five focus frames, the economic frame, revealed less uniform results. In the German case, the economics frame was used in 23.2% of print media texts, far more than the 8.8% on Twitter. In the North American case, the economics frame was used in 31.6% of print media texts

compared with 4.5% of those on Twitter. Use of the economic frame in the Spanish case was nearly the same for both mediums: it was found in 19.6% of the print media texts and 19.9% of tweets.

The third most frequent frame overall was the social/community frame. This frame was found in more Twitter items than in print media, its overall prominence is due to its prominence in the largest group of texts: in the North American twittersphere (in other words, it is mainly prominent in only one case and medium which is the largest group of text items in the study by a large margin). There, it was found in 5.2% (n=628) of tweets and to 3.6% (n=18) of print media items. This is turned around in the Spanish case, where print media employed the frame more than the twittersphere (2.8% to 1.2%). In the German case, the frame is entirely absent on Twitter and represented in only one print media text.

The health/safety frame is more prominent in print media than Twitter in North America and the Spanish case, while it is completely absent from both mediums in the German case. The environmental frame was found to be represented more frequently as a proportion of print media texts in North America and Spain compared to the proportion of tweets in which it was found. The German case is the opposite, where in terms of percentage of the respective medium, Twitter saw proportionally more heavy use of this frame than did print media (although the difference between the mediums was less substantial than in the other two cases).

Case/Medium	Economic	Environment	Health/ Safety	Mobility	Social/ Community	Other Frame	Frame Unclear	Functional	Total Texts by Case/Medium (100%)
All Cases/All Texts	*6.3%*	*2.2%*	*3.3%*	*18.7%*	*4.9%*	*57.2%*	*0.4%*	*9.0%*	___13263___
All Cases/Print	*27.4%*	*11.4%*	*4.6%*	*54.3%*	*2.7%*	*9.3%*	*4.1%*	*0.0%*	*678*
All Cases/Twitter	*5.2%*	*1.7%*	*3.2%*	*16.8%*	*5.0%*	*59.8%*	*0.2%*	*9.5%*	*12585*
German/All Texts	**17.7%**	**2.3%**	**0.0%**	**58.5%**	**0.3%**	**22.7%**	**0.0%**	**3.0%**	__299__
German/Print	23.2%	2.2%	0.0%	71.4%	0.5%	8.1%	0.0%	0.0%	185
German/Twitter	8.8%	2.6%	0.0%	37.7%	0.0%	46.5%	0.0%	7.9%	114
N. America/All Texts	**5.4%**	**2.0%**	**3.4%**	**17.7%**	**5.2%**	**58.3%**	**0.5%**	**9.5%**	__12344__
N. America/Print	31.6%	13.2%	6.7%	48.2%	3.6%	6.7%	7.0%	0.0%	386
N. America/Twitter	4.5%	1.6%	3.3%	16.7%	5.2%	60.0%	0.2%	9.8%	11958
Spanish/All Texts	**19.8%**	**6.8%**	**1.6%**	**18.7%**	**1.5%**	**52.7%**	**0.2%**	**2.7%**	__620__
Spanish/Print	19.6%	20.6%	4.7%	46.7%	2.8%	20.6%	0.9%	0.0%	107
Spanish/Twitter	19.9%	3.9%	1.0%	12.9%	1.2%	59.5%	0.0%	3.3%	513

Table 11 - Frames in Text Items by Case and Medium (%)

The most apparent commonality between the cases and mediums is that the mobility frame is proportionally the strongest, with the exception of only the Spanish Twitter. Another clear commonality is the ranking of the economics frame, the second strongest in all cases and mediums with the exception of North American Twitter and Spanish print (and there it's a tight race). Beyond this, the commonalities are sparse. The social/community frame, for example, is the third strongest frame of all cases and mediums, yet it occurs mostly on North American Twitter, is completely absent on German Twitter and is minor in the Spanish case, where it is stronger in the print texts than on Twitter.

An analysis of the frames across cases and mediums reveals that the top three frames (mobility, economics, environment) are common to every cases' print media content (see table 11 and figure 25), as well as Germany's Twitter content. This is not the case for the Twitter content of the other two cases, for which fewer commonalities can be established across the case cultures.
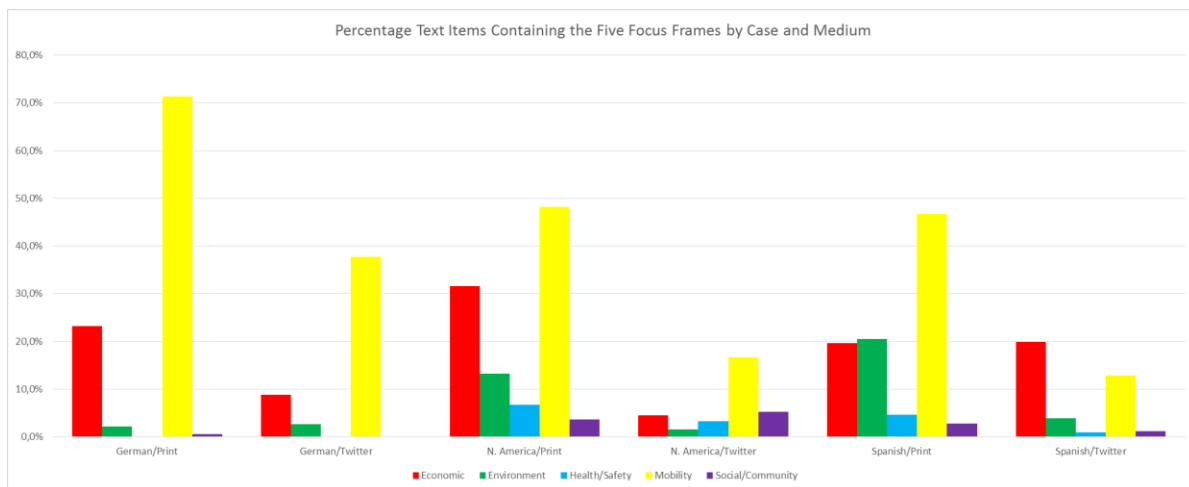
Figure 25 - Percentage of Text Items Containing the Five Focus Frames by Case and Medium

8.4.6. Frame and Evaluation Intersections across Cases and Mediums

A further commonality across cases and mediums is that text items employing a positive evaluation and mobility frame represent the largest group of text items across all mediums and case cultures coded with a clear evaluation and one of the five focus frames, this intersection represents 13.5% of all text items in the study. While it's common to every text group (with the exception of Spanish Twitter) that mobility is the strongest frame, there is significant differentiation in the magnitude of strength. In Germany, the percentage of texts with the mobility frame is much higher than in the North American case, even though in both cases the mobility frame is found to be the frame used in the largest number of text items.

If we add unclear frames to this analysis, texts with positive evaluations and mobility frames dominate in all but the Spanish Twitter text group, because there the economic frame with an unclear evaluation is the largest intersection.

The only substantial intersection with a negative evaluation was with the mobility frame. Accounting for between 3.2% of print media texts in the German case and 4.7% in the North American case, this intersection was larger only in Spanish print media, where it reached 4.9%. The intersection of an ambivalent evaluation and mobility frame is represented in both German and Spanish print media, albeit not particularly prominently. Further intersections of clear evaluations with the five focus frames were minor and isolated to single cases and mediums.

8.5. Results Summary: Quantitative Content Analysis

The findings show a correspondence between the framing of the issue of bikesharing in mass media with the framing of the issue on Twitter. The mobility frame is the most frequently occurring frame in the whole sample, and is also the most frequently occurring frame in five out of six case/medium combinations (Twitter content in the Spanish case providing the only exception). Further, the economic frame is the second most frequent overall of the five focus frames. It comes in second in three case/medium content groups, but is represented prominently in all cases and mediums. The third most frequent frame overall is mainly to be found only within one case/medium group: the social/community frame was strongly represented in the North American Twitter content, with little or no representation elsewhere.

The German case displays the highest correspondence of frame frequency between print media and Twitter texts. Not only in the distribution of the frames that were observed, but also the absence of the health/safety frame as well as the social/community frame corresponded. In the North American and Spanish cases, the quantitative content analysis indicates substantial variation between mediums in frame use. In the North American case, the main correspondence is that the mobility frame was found with the highest frequency on both mediums, after that, the frequencies of the other frames do not correspond in absolute or relative terms. In the Spanish case, the mediums did not resemble one another in terms of the frames that were observed. There was more similarity displayed in the absence of frames: both the health/safety and social/community frames were infrequent on both mediums.

In all cases and mediums, positive evaluations of bikesharing were the most prominent. Evaluations in the Twitter content were more often unclear, but of clear evaluations, positive evaluations were strongly dominant. Beyond the overarching commonality of positive evaluations, clear correlations in evaluations

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of bikesharing as an issue were not indicated. Ambivalence was highest in the German and Spanish print media texts, negative evaluations were highest in North American Twitter print content and Spanish Twitter content. In print media texts from every case culture, a higher percentage of ambivalent evaluations was observed than in Twitter texts. The development of evaluations over time do not indicate a correspondence between mediums. This was the case both within the cases and between the cases.

There results also indicate that there is a broader, cross-case correspondence as regards what frames were used in positive portrayals of bikesharing, specifically for print media. The top three of the five focus frames which were found be used in combination with a positive evaluation in print media for all case cultures are mobility, economics, and environment. This holds true for the German and Spanish Twitter text groups as well, leaving the North American Twitter texts the only group where this trend is not exhibited. While there was a substantial correspondence in positive evaluations, also in combination with three of the five focus frames, this did not lead to any observable correspondence in acute temporal framing or evaluation trends between either the two mediums or the three cases. Thus, we can observe broad congruencies (e.g. positive evaluations and three major frames), but lack evidence of any specific interactions between cases or mediums.

Although infrequent, there were occurrences of corresponding trends such as peaks and valleys in the employment of certain evaluations or frames within the cases between mediums. Both mediums in all cases demonstrated a decline in output around week eleven, resulting in similar declines in the frequencies of frames and evaluations during this period. This common trend was the most substantial of the temporal observations. Beyond the few exceptions mentioned specifically in the analysis reporting above, comparing the distribution of frames and evaluations over time rarely indicated correspondence.

9. Qualitative Analysis: Frames and Evaluations in Depth[6]

An additional qualitative approach adds depth to the quantitative analysis. This segment of the research explains what's behind the numbers: the possible correlations, similarities, overlaps, or lack thereof in the distribution of frames and evaluations. The foundation for this has been laid in the quantitative analysis. The content is qualitatively compared with a focus on temporally coinciding frame occurrence – the trends and moments that were identified in the quantitative analysis are more thoroughly examined to determine to what extent frames on the various mediums were employed in the same way, and whether they are being applied to the same subjects.

9.1. The German Case

The German case was the sole case in which there were more print media texts than Twitter texts in the corpus. A look at the German case on figure 24 shows that on both mediums, positive evaluations are most prominent on both mediums, while negative evaluations are infrequent in both mediums. Further, the frames found in the German case in figure 25 could suggest a correlation in the distribution of frames in print media is similar to that on Twitter. A closer look reveals that although the same frames were prominent on both mediums, the topics they were being applied to were not always the same. In the German case, the topics of temporally-related frames were mostly employed in talking about different topics.

9.1.1. The case of Cologne's Bikeshare

The mobility frame was strongest on both mediums. In week one of the present study there were 3 newspaper articles and 19 tweets in the corpus coded with the mobility frame. All but one of these tweets refer to the launch of the bikeshare program in Cologne by the local Transport provider *Kölnische Verkehrs Betriebe* (KVB). That one exception (GT36) is also the only tweet from that week with the mobility frame which did not contain a link to a local newspaper article in the *Kölner Stadt-Anzeiger* (GD4 in the print media corpus), also coded with the mobility frame. The article in the *Kölner Stadt-Anzeiger* was published online at 6:00 pm on 15 October 2014, it appeared in the printed version of the newspaper the following

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[6] This chapter and those hereafter include references to and quotes from the text corpus (see chapter 7 and appendix 2). The references will be cited in the following way: [case code][medium code][number of text item]. The case codes are 'G' for the German Case, 'N' for the North American Case, and 'S' for the Spanish case. The medium codes are 'D' for print media text item, and 'T' for Twitter text item. For example: ST122 is a Tweet number 122 from the Spanish case.
For print media Text items, the number of the text is found on the first line of the first page of the text item, in front of the marker #TEXT. For Twitter text items, this number is found in the first column of the spreadsheet. The corpus is available from the author upon request.

day. No tweets were recorded on the 15 October (the day the article was published online) referring to the Cologne's new bikeshare. The next day, the 16th October 2014, there were 31 tweets collected referring to bikesharing. The first tweet in the corpus from that day was from the Twitter account of the *Kölner Stadt-Anzeiger* (@ksta_koeln) itself (GT3). 18 tweets from that day were coded with the mobility frame, and 28 of the 31 tweets from that day contained a link to the *Kölner Stadt-Anzeiger* article. One tweet by an affiliate of a Cologne radio station contained a link to a stub article on the topic on the radio's website.

The radio's website did not include link to Twitter nor a pre-fabricated tweet. The article on the website of the *Kölner Stadt-Anzeiger* had a button for Tweeting the article with a pre-fabricated message. The prefabricated message was only tweeted once, but then retweeted from that account twice. The tweet which accounted for the most retweets of the article was from the account of an online editor for the *Kölner Stadt-Anzeiger,* accounting for 8 retweets that day. The original tweet from the Twitter account of the *Kölner Stadt-Anzeiger* was retweeted four times that day. Thus, almost half (14) of the 31 tweets recorded on the 16th of October came directly or indirectly from the newspaper outlet responsible for the story. 11 of the sixteen tweets in the remaining days of October referred to Cologne's planned bikeshare. Cologne's public transport provider, who is also responsible for the bikeshare, sent out a press release on the about a week after the article above appeared in the *Kölner Stadt-Anzeiger*, prompting another article in the same newspaper. This one was also tweeted by the newspaper, and retweeted four times.

Important to note for analyzing the intermedia development of this particular story, the articles and the tweets all referred to the announcement of the plans to begin the bikeshare program, which was not actually launched until May of 2015. Thus, the first three weeks of the German Twitter corpus were strongly dominated by the *announcement* of plans for bikesharing in Cologne, but very little content stemming from twitterers first hand experiences with bikesharing. In other words, the majority of the Twitter content was cause by and dependent on communication from news organizations.

The other newspaper articles from that day (or time period period) were not mentioned, linked, or made reference to in the Twitter corpus. Twitter was then still until the 11th of November, in week five of the study, when news organizations, the *Hessischen & Niedersächsischen Allgemeine* the *Nürnberger Neuste Nachrichten,* and an online news gathering account in Hamburg tweeted about various local bikesharing programs or developments.

9.1.2. Common Topics and Frames in the Texts?

The tweets in week five of the study continued to display the intermedia agenda-setting function of media institutions in the German case. All six tweets during that week that referred to the bikeshare program in Berlin linked to an article (GD63) from the *Berliner Morgenpost*. Five of them used exactly or slightly augmented versions of the prefabricated tweet offered by clicking the Twitter button next to the online version of the article from the *Berliner Morgenpost*, reproducing the wording given by the newspaper. The framing, however, did not coincide between the print and Twitter references to the issue. The article itself focused on the costs, public subsidies, and procurement process surrounding the future of Berlin's bikeshare program, while this was not at all captured in the tweets, which suggested that Berlin's bikeshare should become more 'attractive'. That was the title of the article as well as the prefabricated tweet text, which, possibly due to brevity, did not elude to the underlying arguments that would be used to frame the issue.

Later in the study, the connection between Twitter and print media content was not as strong as in the case of the first three weeks. Week 20 of the study, for example, showed a rise in both print media and Twitter output (see figure 2). The Twitter content was not produced by any citizen or civil society accounts, only business accounts. One of the tweets from the account of a business was retweeted by a citizen. All the tweets from that week included links, none of them linking to print media articles or websites. The content was also completely different between the two mediums. While the newspaper articles from this week were featured letters to the editor (examples include GD169 and GD170) or reports on the results of the Bicycle Climate Test from the General German Bicycle Club (or *ADFC*, Germany's largest bicycle lobby: GD167, GD168, and GD172), the tweets focused on bikesharing and bike rental as extras on travel booking offers, and one travel company tweeted about the new sponsor (Santander Bank) of the London bikeshare.

In the last week of the study, text output on bikeshare in both mediums went up. This time, the Twitter producers were a mixed group, including citizens, civil society organizations, as well as media outlets. Seven of the nine tweets contained links to print media, one contained a link to a Facebook post, and one did not contain any link. During this week there was a combination of initial Twitter sources for the print media content. A reporter tweeted (GT113) his own article (GD193), which was then retweeted by the newspaper for which he wrote it (GT114). Civil society Twitter accounts tweeted with links to print media (GT108) which were not tweeted by the news organization itself. And a citizen tweeted a comment not related to any article found in the print media corpus.

9.1.3. The Context makes the Content

The strength of the mobility frame on both mediums reveals that the way bikesharing was portrayed in the German case overall was very clearly as a mobility issue. The mobility frame was strongest on both platforms. Oftentimes the bikeshare operators in German cities are the public transport providers, so the discussion is colored by its close association to other transit. In some cities (and notably large ones like Berlin and Hamburg), the *Deutsche Bahn* (German Train) is the operator of bikesharing, again already establishing the issue in relation to transport. Relative to the other cases, there was very little Twitter activity in the German case.

As noted above, many print media articles coded with the mobility frame were stories on a report from the ADFC (the German bicycle lobby). In their ranking of cities for bicycle friendliness, some of the criteria deals with bikesharing. Numerous local newspapers did stories on the report, while only two tweets referenced it in connection with bikesharing. The two tweets that did refer to the Bicycle Climate Test were actually temporally far removed from print media texts covering the same topic, because they were soliciting participation in the study, while the coverage in print media focused on the results once they were published. While there was content on Twitter referring to the published results of the study, only a few tweets were included in the corpus because not many tweets referred to bikesharing, even though it was one of the aspects of the study. Further print media articles described political processes leading to or away from expansions or changes in bikeshare programs, or describe bikesharing as an alternative to driving. Bikesharing schemes themselves are not usually challenged, but rather critique is aimed at how they are being implemented or managed and how they fit in with the existing city infrastructure.

This is also the case to some extent in the print media coverage coded with the economic frame. While uncommon on Twitter, in print media the argument surfaces that bikeshare programs should be financially self-sustainable. The economics frame was sustained in print media over the course of the study in the German case, but it was very blotchy on Twitter (see figures 4 and 7). All of the tweets with the economics frame except one referred to the cost of a new bikshare program in Cologne. In detail, two of these tweets which together accounted for 6 retweets, came from the *Kölner Stadt-Anzeiger*, a local newspaper from Cologne (see above). That amounts to 80% of tweets coded with this frame coming from the same original author and happening in the second half of October 2016. (One of the other tweets also links to a *Kölner Stadt-Anzeiger* article.) As regards the print media content, two articles coded with the economic frame referred to the same event.

The few tweets (2) and print media items (4) coded with the environmental frame do not have commonalities as regards their content, aside from an environmental orientation, they refer to different locations, events, and policies.

9.1.4. Summary of the German Case

The large majority (80.7% to be exact) of all the tweets in the German corpus contained links. While not all of these linked to media articles or media outlet websites, most of them did. This is indicative of the prominence of the intermedia agenda setting capacity of media institutions in the German case. While the framing of the issues did not correspond especially closely in thematic terms, media organizations were responsible for much of the content on Twitter regarding bikesharing. Even though bikesharing existed in numerous German cities already during the study, it was uncommon to find references to real-life experiences or confrontations with bikesharing in the German Twitter content. The content on Twitter was mostly one-way, projecting a statement without receiving (or expecting) an answer. The use of prefabricated tweets through the Twitter buttons next to online versions of print media articles allows media outlets to enable others to spread their messages and content in a way that attributes it to the respective Twitter user.

While media institutions enjoyed considerable success at setting the agenda of when to talk about which issues regarding bikesharing on Twitter, the framing was more differentiated. The frames were often not used in the same way on the different mediums in the German case. The economic frame, for example, was more often employed in the print media to refer to the total costs of bikesharing, referring to public procurement expenditures or costs to bikesharing operators or to municipalities. On Twitter, however, the economic frame was more focused on the costs to users of bikesharing programs, and this was the case even when the tweets were linking to print media.

There was very little sensationalism in the German case as compared to the other cases. When the texts handled bikesharing as the agent of major change, it was most often in the print media and referred to bikesharing programs in other cities. Further, bikesharing was not a major issue of one of the drivers of content for the print media: the Bicycle Climate Test report by the German Bicycle Lobby ADFC. Many other issues included in that report took precedence over bikesharing in the print media coverage of that report. The lack of Twitter content referring to bikesharing and the report from the ADFC could thus be interpreted as confirming the intermedia agenda setting capacity of print media: since the print media did not emphasize that aspect of the discussion, the discussion also remained absent on Twitter.

A thorough examination of the topics of the announcement of Cologne's bikeshare as well as Berlin's hopes for an improved bikeshare and some isolated cases such as that of Nurnberg mentioned above stand in opposition to the case of the overwhelming majority of newspaper articles, as well as those covering the ADFC's Bicycle Climate Test. The news organizations in the cases of Berlin, Cologne, and Nurnberg brought their own content into Twitter and thereby effectively determined the content of the Twitter conversations on bikesharing. What links the stories and issues that received more attention on Twitter in the German case is that they represent discussions about bikesharing projects in larger urban centers. While there was Twitter activity from smaller municipalities, there was less of it and it was much more isolated, experiencing few retweets and even fewer responses or other types of interaction. Thus, while Germany is rather decentralized, the content in the Twitter corpus here was quite limited to larger cities, while the print media content covered bikesharing as an issue also in small towns.

In the German case, the communication on both mediums was very information oriented. There was very little expectation for interaction or discussion. When participation of some form was mentioned, it was to indicate the possibility to participate in a survey, and this was not explicitly stated as an invitation. Also on Twitter, where the interactive web aspect would seem intuitive, there was next little interaction. There were only nine tweets coded as being explicitly interactive. Many tweets were simply statements, and not responded to.

9.2. The North American Case

The results of the quantitative content analysis did not suggest strong correlation in between Twitter and print media. Neither in evaluations nor in the framing were clear relationships to be found. The mobility frame was the most frequently coded frame in both mediums, but the similarities end there. Here we examine a number of issues more thoroughly, with an eye to qualitative connections that might not have been indicated through the quantitative analysis.

9.2.1. The Social/Community Frame in North America

There is significant discussion on Twitter about access to bikesharing for low-income communities, an issue that is all but overseen in the print media content. The social/community frame was found to be the second strongest frame on Twitter. In print media, it was the least common of the five focus frame in that medium. This may indicate that prominent frames on Twitter do not necessarily spill-over or expand into print media. But what content actually made up this discrepancy?

A more detailed assessment reveals that one of the peaks in tweet activity for the social/community frame (during weeks two and three, see figure 14) is prompted by the release of a 200+ page report by the Mineta Transport Institute. The report illustrates in detail the large cleft in bikeshare use between the rich and the poor, among other research findings. The first tweets relating specifically to this event come *a day before* (NT2007) the report was released, authored by a twitterer who was at a conference where the findings of this report were being presented. His tweets did not spread and only generated one retweet. The next day a formidable wave of tweets started focusing on this issue, with a majority of them linking to an article from that day which appeared in the blog *CityLab*. The first of these tweets was not from *Citylab* itself, but from a university commuting blog (NT2287). Later, other blogs and news outlets (for example the news website *VOX* on October 29th) also mentioned the report, with around 50 tweets linking to these as well. The prefabricated links offered by *Citylab* and *VOX* by clicking the Twitter button next to the article were also responsible for a slew of these tweets. Stories on the report by the Mineta Transport Institute did not appear in the print media corpus. The blog *Citylab,* which broke the story of the report first, is a web magazine owned by the print magazine *The Atlantic*, which did not print any stories related to this issue.

Another event which was responsible for a peek in tweet activity was the announcement that memberships in the Washington, D.C. bikeshare program could be purchased in cash. The announcement came in mid-January of 2015. The move was a response to the criticism that bikeshare was largely for wealthier individuals and was failing to be used by low-income citizens, many of whom do not have access to a credit card, until this point necessary to become a bikeshare user. There was a spattering of Twitter activity about this dilemma, but it came to a peak on January 14th 2015. This was not only the case for D.C.'s *Capital Bikeshare* program (which expanded over the state border into Arlington, Virginia), but for almost all of the bikeshare programs across the country. Arlington's transport authority claimed that this was the first bikeshare program in the United States which would be available to unbanked individuals.

The Chief of Arlington County's Commuter Services announced the development via Twitter (NT12131), as did the city's Twitter account (NT12124) already on January 14th. The Twitter accounts of the bikeshare program, both for Washington D.C. and for Arlington County, retweeted the information, but did not author any tweets on this issue. On 22nd January, the *Washington Post* published a short piece of "news in brief" which contained this information (ND298), but it was otherwise not found in the print media. The peaks in the frequency of tweets coded with the social/community frame on the 14th and 16th of January 2015 (week 14 of the study) are almost exclusively attributable to the cash membership option for Capital

Bikeshare in Arlington. There were no print media articles on these coded with the social/community frame until the one on the 22nd January, and none afterward, while the Twittersphere continued to mention the development. Most tweets contained links to blogs and other media, but not to newspapers. There was a press release published on the website of the Arlington County Government, as well as an article published on the blog *Mobility Lab*, which is entirely funded by public bodies (such as the Arlington County Commuter Services, the U.S. Department of Transportation, and the Virginia Department of Transportation). This is an issue which drew substantial attention and talk on Twitter, but received only a single mention in print media.

9.2.2. The Case of Bikeshare Workers Unionizing

An issue which began to receive attention on Twitter in the same period as the aforementioned Mineta Transport Institute report was that of bikeshare workers seeking to unionize.

An unexpected finding in the North American case was substantial Twitter activity about the event of bikeshare workers unionizing. The topic was mentioned in five print media articles, making up the main issue of three of them (ND35, ND37, ND76). Meanwhile, there were 534 tweets referring to the unionization of bikeshare workers, almost unanimously in support of the bikeshare workers unionizing. (See figure 26 for details on the temporal distribution of the number of print media and Twitter text items about the issue of unionization of bikeshare workers.)

The first tweet in the North American Twitter content was on the second day of the corpus, and during week one there were two more tweets alluding to bikeshare workers unionizing. At the end of week two, on the 24th October, the *Washington Post* published an article online (ND35) which was published in their print edition the following day. As of that day, the issue of bikeshare workers forming or becoming a part of a union received a lot of attention on Twitter. Many of the items talking about the bikeshare workers unionizing have been coded with an unclear evaluation of bikeshare, as bikeshare itself was often not evaluated as being good or bad and labor relations are in the forefront. Similarly, the framing was often coded as unclear, although there were some unionization tweets coded with the social/community frame, while the print media articles were often coded with the economic frame. This reflects differences in the two mediums: where twitterers tend to focus on the individuals, while media outlets put more emphasis on the implications of events for organizations.
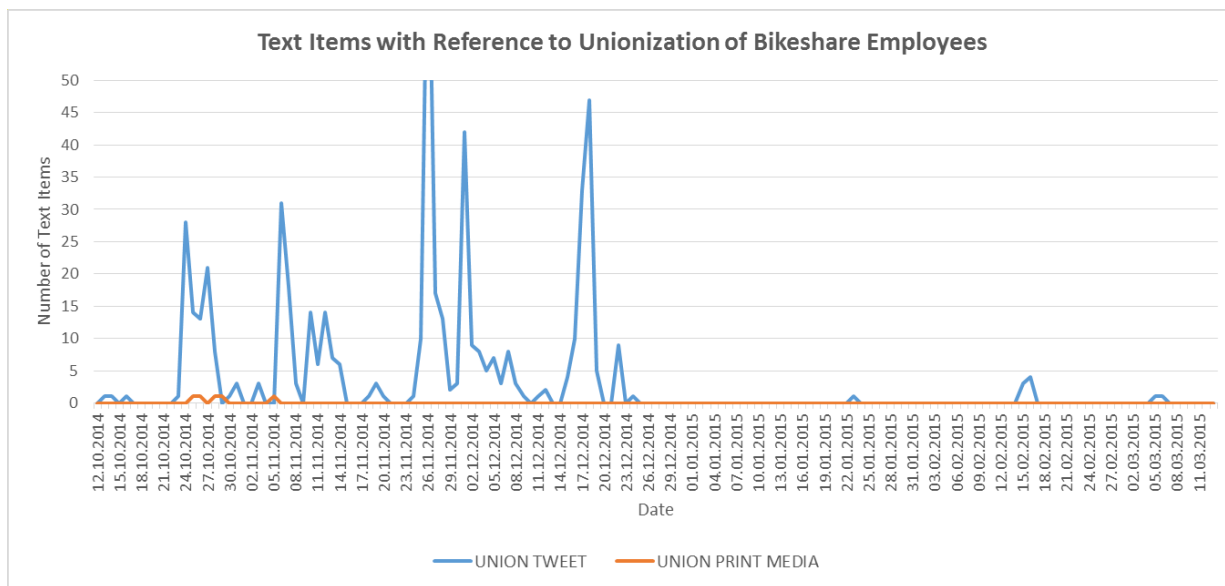
Figure 26 - Text Items with Reference to Unionization of Bikeshare Employees

After the *Washington Post* article, Twitter activity around the issue of Washington, D.C. bikeshare worker's path toward unionization was heightened. Before the article, New York City's Transport Workers Union used their Twitter account to tweet about union presence for bikeshare workers nationally (NT179). The tweet was not retweeted. After the discussion about bikeshare workers and organized labor was elevated (since the *Washington Post* article was published), the same Twitter account of the New York Transport Worker's Union tweeted about the D.C. worker's road to unionization again (NT9649), and this time it immediately received numerous retweets. The New York Transport Workers Union Local 100 had been working with the bikeshare employees not only in Washington, D.C., but also in Boston. The local labor organization had developed the goal of an overarching bikeshare union with the employees, and was working to support and represent the non-local bikeshare workers until this task was achieved.

After the two initial stories in the *Washington Post* (ND35 and ND37), the story of the D.C. workers did not resurface again in the print media corpus. Other, less mainstream print media outlets not contained in the databases used to produce the print media corpus did feature the issue, but this was limited to non-mainstream media organizations like *Labor Press* or *Working In These Times*. On Twitter, the issue continued to be discussed. Non-mainstream blogs and news organizations covered the developments and their stories were tweeted (for example NT3938; NT5262). Citizens and organizations tweeted a petition supporting D.C. bikeshare workers in their quest to unionize (NT4432; NT5222), and users called upon the D.C. bikeshare operator (Capital Bikeshare) to respect their employee's wishes to organize, sometimes

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also threatening to cancel (or stating they had already cancelled) their membership of the bikeshare program (NT7312; NT7343).

Twitter was also used to call attention to the Washington, D.C.'s bikeshare operator firing one of the employees responsible for some of the organizing process. This was the same bikeshare worker featured in the initial *Washington Post* article. The worker posted on Facebook that he had been fired for organizing his colleagues, and this was picked up and tweeted numerous times on Twitter. Citizens, likely also bikeshare workers and their friends and supporters circulated information regarding this process as well. One tweet linked to a scan of a message that the Capital Bikeshare had sent to its employees inferring that unionization would have negative implications for the company and its employees. The reporter who authored the initial *Washington Post* article continued to be a prominent part of the discussion on Twitter generating many retweets, as well as tweeting the information that D.C.'s bikeshare workers did vote in favor of unionization (NT9846).

There was not one tweet to be found in the Twitter corpus that was clearly opposed to the unionization of Capital Bikeshare employees, only support for their unionization process. Capital Bikeshare was alleged to have run an anti-union campaign, circulating information against unionizing and firing employees involved in the push to unionize. The bikeshare operator has (also at that time) a very active Twitter account with which they communicate with customers, members, and others. Capital Bikeshare's Twitter account was very active throughout the duration of the study, most often in dialogue with users about where stations were full or empty or what docks or bicycles needed maintenance. During this period they also invited to open-houses via Twitter, or provided information about service outages, and used Twitter extensively to gather information from the public about where the next bikeshare docks should be placed. As regards the issue of unionization of their employees, however, the account remained silent. The handle was @-mentioned in numerous tweets throughout the process, but Capital Bikeshare did not reply to or make any statements regarding the unionization process via Twitter.

Labor organizations and advocates, citizens and bikeshare workers themselves took part and featured in the Twitter content about the unionization. However, the most active and most retweeted interlocutors were those who wrote articles about the process. Here, the *Washington Post* author was the most prominent, but authors from blogs like *NextCity.org* and *greatergreaterwashington.org* were also featured prominently and rewarded with retweets, much more so than other interlocutors.

The issue of unionization of bikesharing employees, especially those working for Capital Bikeshare in Washington, D.C., tapered out and ended in week 11, after having sustained significant levels of activity for the first half of the duration of the study. Weeks 10 and 11 were mainly congratulatory messages for the successful formation of a union, ending with the last tweet temporally related to this issue on the 24th of December: "I'm a little late on this. But congrats to Capital Bikeshare on voting to unionize http://t.co/OElhLOSPwO" (NT10391).

9.2.3. The Economic Frame

The economic frame was the second strongest frame from the print media content and the third strongest frame on Twitter. It maintained a substantial presence throughout the study on both platforms (see Figure 3). Many print media articles coded with the economic frame discuss the sources of funding for planned or emerging bikeshare programs. The common theme is whether bikeshare programs are funded with public or private money. The question of who provides funding for bikeshare programs is often a main aspect of the newspaper articles. Second to that in the print media content coded with the economic frame is the discussion of whether or not bikeshare programs earn money, as a business venture. A common claim associated with the economic frame was that public funding should not be used for these projects, which are expected to be financially self-sustaining. On Twitter, this claim (and the related discussion) is also to be found, although the space of 140 characters is not often conducive to making a full case for one side. Links to media articles or additions to pre-fabricated tweets allow twitterers to take a side (e.g.: "Bixi asks for $3M/yr from #Montreal to keep running. Mayor to decide this week. (Do right thing, Coderre!) http://t.co/YDhzGeK3mr #bikeshare" [NT6804]). The appeal in parentheses was an oft-retweeted addition of one twitterer to the pre-fabricated tweet. The link leads to the website of a television station which did a TV piece on the Montreal Bikeshare.

The coverage of the buyout of a large bikeshare operator and service provider by the real-estate company REQX also saw heavy use of the economics frame. Towards the end of October 2014, this was covered both in print media as well as on Twitter, which featured a high rate of pre-fabricated tweets that twitterers tweeted using the news websites Twitter buttons from within the article.

Some of the first tweets included in the North American Twitter corpus coded with the economic frame were regarding the sponsorship of Seattle's bikeshare, called Pronto Cycle Share. The program was launched on the 13th October 2014, the second day of text collection for the present study. Numerous tweets were collected, but the corpus does not include a single print media article about the launch of the program. Various blogs and Seattle's first newspaper to go online-only, *Seattle Pi*, reported on the

bikeshare launch on the 13th, but none of the major newspapers, regional or local, had stories on the launch. This is one reason why for the first five days of the North American print corpus, there are no articles coded with the economic frame. If newspapers reported on the issue in the days before the project was launched, these would not have been included in the corpus because they would have appeared before the timeframe of the text collection.

Seattle's Pronto Cycle Share, which is one of the few large North American Bikeshare programs to close to date (it stopped operations on 1st April, 2017), was a large project funded through a prominent consortium of private sponsors including an airline, a sporting goods retailer, a health insurer, and a real estate company. Some of the initial tweets thank the sponsors and laud the public-private cooperation in funding and implementing the project (NT110; NT119). Most of the tweets in the first week referring to Seattle's new bikeshare with the economic frame also display a positive evaluation (a few are ambivalent or unclear, none are negative). The tenor of the Twitter content connected to this event is very optimistic, but print media attention during and after the launch is completely missing in the print media corpus (see figure 27).

A counter example to the case of Seattle's bikeshare is that of the Tampa Bay bikeshare program. Here, there were numerous articles in the print media that referred to Tampa Bay's bikeshare, while there was nothing referencing it in the Twitter corpus: In week 2 of the study, there were three print media articles featuring Tampa Bay's Coast Bike Share program, which was being showcased in a local Tampa event called 'Cyclovia'. Two of these employed the economic frame, making the argument that this type of project is a part of the 'new economy' (NAD20; NAD21). There were no tweets referring the event or the Coast Bike Share at all coded with the economic frame. (Later on, however, when the bikeshare program was introduced to Tampa, there were Tweets as well as print media texts which did mention it.)

9.2.3.1. Content Correspondence: common frames, common content?

In the 29th October 2014, there was high frequency of the economic frame occurring in both print media and Twitter content. The major topic driving these texts is the buyout of Alta Bicycle Share, a large bikeshare operator, by a real estate firm called REQX. The story actually broke a number of days earlier, on the 24th and 25th October 2014, and while the talk in print media focused mostly on New York's Citi Bike program, the tweet content was much more varied. The first tweet was "Hey Chattanooga, your bikeshare operator was just bought by a real estate company http://t.co/z4LKCNiZh5" (NT2367), the link points to an article on the political news blog *Politico* from the 24th October. In this instance, Twitter and

print media were referring to the same issue in the same moments with the same framing, but this remains an exception.
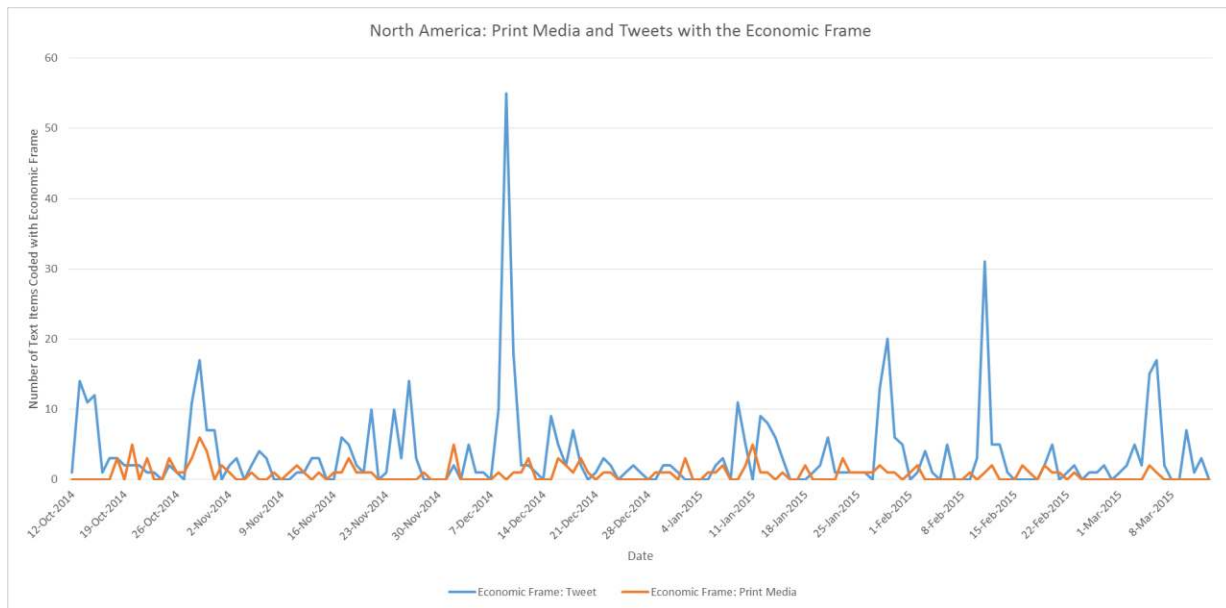
Figure 27 - Text Items Containing the Economic Frame: North American Case

The content with the economic frame observably differs in around weeks 6 and 7. The last article on the 21st November refers to New York's Citibike paying the city for losses in parking revenue because bikeshare docks occupy former parking spaces. The economic frame is not found in the print media content again until a week later, on the 28th November, when a story refers to a Texas congressman arguing against using a part of a transport budget for bikeshare. The heightened frequency of the economic frame in the Twitter content in the period between these articles don't refer to those events, but the focus is rather on funding for the BIXI bikeshare program in Montreal and investors raising $8 million for a proposed bikeshare project in Hawaii.

On 9th December (week 9 of the study, see figure 27), there was a large peak in tweets coded with the economic frame, amounting to 55 tweets that day. The same day, the print media corpus contained not a single article with the economic frame. On Twitter, the content coded with the economic frame was varied, but two strong topics were Toronto's mayor announcing more funding for bikeshare (overwhelmingly with a positive evaluation) and numerous retweets of a tweet from the day before (NT8627: "My @bikeshare membership pays for itself time and time again. Happy Holidays! #bikedc http://t.co/z7h0s7CmhR") and comments of other twitterers on that tweet. The print media article coded with the economic frame the following day refers to bikesharing as part of a new economic model, while

the article the day before refers to bikesharing in Tampa, Florida (11 tweets also referred to the Tampa bikeshare).

Again on 29th January there were more Tweets recorded using the economic frame than usual, and there were a few print media items. The print media items were both newswires, one referring to Federal EPA funding for bikesharing programs and the other about the economic prospects of a bikeshare in San Antonio. Neither of these stories contributed to the spike in Tweets with the economic frame, which focused mainly on membership price hikes for Washington D.C.'s bikeshare program.

On the 11th February there was again an observable rise in frequency of the economic frame, and here, the print media article coded with the economic frame on that same day was referring to the same event as on Twitter. *The Philadelphia Inquirer* article covered the announcement of the sponsor for Philadelphia's bikeshare program. The Twitter content on that day was also focused on Philadelphia's announcement of the bikeshare program and sponsor. The first tweet referring to this event contained a link to print media. The existence of print media texts for coverage are necessary (though not necessarily sufficient) for links to be tweeted pointing to those articles.

9.2.4. The Environmental Frame

The first major grouping of tweets coded with the environmental frame in the North American case came on 17th October 2014. A locally established entertainment and lifestyle magazine (not part of the print media corpus) entitled *The Washingtonian* posted an article for the 4 year anniversary of Washington, D.C.'s bikeshare program with the headline that "Capital Bikeshare reduced Washington's carbon dioxide output by 2.93 million pounds last year." This was retweeted numerous times and the link was tweeted independently from the *Washingtonian* tweet as well. The result was: that day had the largest grouping of tweets related to bikeshare with the environmental frame in the entire period of the study. The print media corpus did not reveal any articles referring to this information, either coded with the environmental frame or not.

Another moment of elevated output with the environmental frame happened at the end of November. On 25th and 26th November, there was a series of press releases circulated by a major North American Newswire (*US Official News*) from organizations such as the World Resources Institute or the Climate Reality project (ND145; ND146). A few days later, on the 28th and 29th November, there were 12 tweets using the environmental frame, all making the claim that there is now scientific proof that bikesharing causes cleaner cities (NT7357; NT7564). There is no explicit direct relationship between this content on

the two mediums, but they both vaguely refer to scientific evidence confirming that bikesharing helps reduce pollution.

After the first half of the study period, the environmental frame in the print media content becomes quite rare. The claim that "we now have scientific proof that bikesharing makes your city cleaner" is picked up again in the twittersphere in week 20 of the study, on February 27th, spurred by a niche-cycling magazine out of Vancouver (Momentum Mag) tweeting the claim. The article they link in their own online magazine is a reprint of an article from November 27th, responsible for the aforementioned peak in Twitter activity with the environmental frame. This second-go for the story is not accompanied by any content from the print media corpus (the grouping of the environmental frame occurs in a period of complete absence of the environmental frame in the print media content, see figures 11 and 14).

9.2.5. The Health/Safety Frame

The common issues discussed in the texts coded with the health/safety frame related to cycling helmets, traffic injuries, and exercise and fitness. There is an ongoing debate about whether helmet laws are a barrier to cycling, and in this case, to the success of bikeshare programs. However, only the texts that specifically referred to helmets and safety would be found to be coded with this frame, while helmet laws related to the success of bikesharing programs were also coded with the mobility frame if that issue was focused upon.

An initial peak in Twitter activity took place toward the end of week one of the study, when on 17th October there were 17 tweets coded with the health/safety frame in one day. 12 of these were retweets of Twitter user @BrentToderian, of a tweet he posted on 12th August 2014 (before the study began). Mr. Toderian is a prominent urbanist out of Vancouver, and a very active Twitter user. His tweet was a reply to a journalist who had asked on Twitter what had happened to Vancouver's bikeshare plans. The first tweet Mr. Toderian replied with said: "Two words: #helmetlaws" and quoted the journalist's query. The second tweet ("Not a single person has died using #bikeshare in the US after 23 million rides. http://bit.ly/1sP45DU via @voxdotcom") was retweeted a few months later on 17th October (NT1091) by another Twitter user (an architect and author), and it immediately generated 11 more retweets. The original tweet has been retweeted 192 times (as of the time of writing), and contains a link to an article on the news website *VOX* (mentioned above).

VOX, not a traditional print media outlet, was not included in the print media corpus. A story from the print media the day before coded with the health/safety frame relates bikesharing to health and fitness,

claiming: "Encouraging bicycle use through bike lanes and bike-sharing programs gets people active and out of cars." (ND11) This is unrelated to the tweets on the 17th October and adjacent days. The print media corpus yields 3 articles coded with the health/safety frame the day following the elevated activity with the health/safety frame on Twitter also refer to different issues (ND13; ND14; ND15). The issues mentioned on the respective mediums using the health/safety frame were not the same.

Later on in the study the health/safety frame becomes more infrequent in the print media corpus, while on Twitter it remains rather frequent. The print media article on 10th January in week 13 (ND266) refers to the calories burned by bikeshare users in the first month of operation of Tampa Bay's bikeshare program, while this was not tweeted or referred to at all on Twitter (although tweets with these types of statistics for larger cities were found on Twitter and in the print media corpus, for example Washington, D.C. NT1203: ".@bikeshare users rode 4.3 million miles and burned 186 million calories last year. http://t.co/74bti9U332" [see also print media text ND389; and tweets NT14484; NT14532]). (The full stop before the '@bikeshare' handle is a functional and stylistic element in Twitter that designates the Tweet not as a direct reply or address to the user in question, but served to make the platform identify the tweet as being public. In other words, when a tweet begins with the designation of a Twitter user, but the twitterer wants others to see the tweet as well, they use this format.)

Naturally, there is a whole segment of tweets that reflect the banal (Murthy 2013), everyday experience with bikeshare linked to health. An example is NT13606: "Was going to be healthy and bikeshare but then I saw the bus and remembered it's cold." Or NT19825: "Watched as a bikeshare rider was nearly taken out in front of me on the 15th St. cycletrack by red light left-turner. Argh." These types of tweets will not be directly linked to news stories, but are linked to discussions that flair up every now and again when a newsworthy event enables it. This is the case for the ongoing debate about bicycle helmets in general, and in the present case, bicycle helmets for bikeshare.

A single Twitter account is responsible for many of the contributions to the helmet discussion on Twitter. User @modacitylife is an advocate of utilitarian city cycling based in Vancouver. Two of his tweets, NT16614 (".@CityofVancouver confirms what most of us feared: *NO* bikeshare coming in 2015. Helmet law remains a major barrier. http://t.co/BsZrO7ZUkq") and NT18077 ("After five months, (helmet mandatory) Seattle bikeshare: 0.5 trips/bike/day. (Helmet optional) NYC: 8 trips/bike/day. http://t.co/OFrQtJs6e8") were responsible for 43 retweets alone. The discussion on Twitter was larger than the input of this particular user. Most the accounts that posted tweets representing the concern that helmets make cycling less safe overall because such policies lead to less cycling, while more cycling leads

to more safety for cyclists (see also NT2420; NT2695), were from experts and opinion-leaders in the urbanism or transport realms. News media institutions, on the other hand, emphasized the heightened individual safety benefits of helmets, while neglecting to interact with the argument that overall safety is decreased.

The tweet NT10057, for example (Man Suffers Traumatic Injuries in Capital Bikeshare Crash http://t.co/q6kw28lXrP #DC), is from a local television station. The news spot that the link points to is a story of a man who was struck by a car and suffered major injury; throughout the story, the plaidoyer for helmet use is focused on. A similar story is tweet NT11195: "Man sues NYC for $60,000,000 - after crashing during Citi Bike ride - because city doesn't requre helmets. http://t.co/5BEh6yybdG #bikeshare". The link points to a story in a New York based blog, and the story also pops up in the print media corpus (ND71). The helmet discourse caused observable dialogue on the twittersphere. A number of tweets were recorded which were parts of two- or more way discussions (NT405; NT949, NT1427; NT3766; NT6258, to name a few examples). The helmet issue, however, is rarely mentioned in the print media content coded with the health/safety frame.

9.2.6. Summary: North American Cities

In the Anglo North American case there is interaction between frame-building processes on Twitter and in the print media complex, but it is not always the case, and common frames do not mean the same events and issues are the objects of discussion. Frames from the print media are found on Twitter regularly, but frames from Twitter are seldom found in the print media. Following the stories coded with the economic frame reveals that there is interaction, mainly via print media texts in their online form being linked to in the Twitter content. The qualitative approach deepens the insight provided by the quantitative analysis of the economic frame in that we reveal that although frames may coexist or be temporally related, the stories and events referred to receive different emphasis in the different mediums. This implies that framing on print media influences frame use on Twitter, but more often in a general sense than acutely.

Twitter in North America proved to be the most interactive of all the cases. There are a large number of tweets which received the code of 'functional' (996 tweets). Many of these tweets were communication to or from the Washington, DC bikeshare program, which uses Twitter as an online help-desk, and has the Twitter handle @bikeshare (which was exactly one of the search keywords plus the ampersand). Others were interactions between Twitter users, expressing thanks, surprise, or other reactions, announcing meetings or other events, or carrying out conversations.

As in the German case, the contributions on Twitter using the economics frame are more focused on the cost of bikesharing to the user. Numerous tweets coded with the economic frame are individuals citing the cost of their own bikesharing use, sometimes compared to other forms of transport. (e.g. "2 years into my @bikeshare membership and I've taken 1,023 rides (1.4 rides a day) for a total of 16 cents per ride #solidinvestments" [NT9512]). Contrary to the German case, and while the emphasis was on the costs to the user, overarching costs and financial developments of cities and businesses were also covered on Twitter. (e.g. "Pittsburgh gets $500K grant to fund 500 German-made bikes for BikeShare program http://t.co/ZV69QUJGnb via @TribLIVE 's @meganharris13" [NT10078]).

At the same time as the revelation of the cash membership option for Arlington residents (mentioned above, in the section on the social/community frame), Capital Bikeshare was rethinking its pricing scheme. Most of the tweets and articles talking about the pricing scheme change were coded with the economic frame. There was a hashtag (#CBOpenHouse) used for associating tweets with an open house meeting where Capital Bikeshare invited the public to talk about the change in the pricing scheme, found in 58 tweets in total. The discussion about the new pricing scheme spread beyond that event and the hashtag, to include more than 200 tweets. This issue received somewhat more coverage in the print media than the former issue (e.g.: ND299; ND309), but the print media coverage was nonetheless rather limited. This serves as another illustration of twitterers pursuing or discussing their own financial interests in bikesharing (i.e. membership or user fees) more than structural funding of bikeshare as a publicly oriented mobility service as is the case for print media.

In sum the North American case displays large variance. There are stories and frames that coincide across the different platforms, but oftentimes, temporally related framing does not reveal common stories or topics beyond the framing itself. The interest on Twitter in unionizing of bikeshare workers, or low-income access to bikeshare shows that Twitter accommodates issues and topics that are not heavily reported on in the established print media. The higher relative frequency of the economic frame in the print media corpus or the relative higher frequency of the social/community or health/safety frame on Twitter show that the mediums do not solely have the same orientation.

9.3. The Spanish Case

Spanish cities have a somewhat longer history and experience with bikesharing than the other two cases, and the content of both mediums shows this. Bikesharing is seldom spoken about as a completely new phenomena, the concept seems to be a familiar one on both mediums. Details about how bikesharing works and when changes will come or what changes are being considered is more commonly the focus of

the discourse. There is no clear indication that the Twitter discourse spills over into the print media discourse, while the opposite – the print media discourse entering and affecting the Twitter content – is clearly present.

9.3.1. The Environmental Frame

There was little activity on Twitter framing bikesharing in environmental terms, while in the print media this association was relatively strong. In the print media, bikesharing is often mentioned as part of a list of tools cities are using to become more environmentally friendly. It is common that bikesharing is mentioned in quotes from officials promoting these measures in the name of environmentalism (examples: SD115; SD166). Also common in this line is the identification of environmental problems paired with a sketch of how they will be addressed. This especially happens with Madrid, which was experiencing severe air quality problems at the time of the study (examples: SD50; SD95).

The focus cities of the environmentally framed text items are Madrid and Paris for both mediums. During the study period, Paris mayor Anne Hilgado was discussing plans to ban diesel cars from the city by 2020, where the bikeshare program was mentioned as an alternative. This was responsible for numerous newspaper articles and newswires coded with this frame. The Twitter content with the environmental frame, however, was interested mainly in another aspect of Paris' bikeshare: bikes especially for children. As for Madrid, the problems with air quality are the main reasons print media content linking bikesharing to environmental issues. Headlines like: "*Guerra a la contaminación El dióxido de nitrógeno, el enemigo a abatir*" [or "War on NO_2 Contamination, the enemy to bring down"] (SD146) describe the tenor. The Tweets with the environmental frame which mentioned the Madrid bikeshare referred to bikesharing as a sustainable practice.

The other main event that fueled discussions employing the environmental frame was Murcia's new bikeshare program, MuyBici, which was portrayed as part of a plan to make the community more environmentally sustainable. This event was not found with the environmental frame on Twitter, but was responsible for numerous articles in the print media corpus.

The environmental tweets from week seven of the study come from one author, a civil society organization, and emphasize sustainability connected with the launch of a bikeshare program in Santiago de Chile. The increase in articles from the print media complex with the environmental frame in the following weeks refer to reduced emissions savings connected to mobility in two Spanish and one French city (Madrid, Castellón, and Paris), where bikesharing was mentioned as a part of the path to reduced

emissions. These are from various sources, with one major contributor being a Spanish newswire service. While both clearly fit in with the environmental frame, there is no clear linkage of the specific content here.

The environmental frame is an example of an issue association that did not result in connected discussions or even framing across the two media platforms. This is observable in the quantitative analysis, as the environmental frame was relatively strong in the print media, while it was rather weak on Twitter. This closer look confirms the narrative that also qualitatively the framing in print media had little in common with the framing on Twitter in terms of the topics and events covered.

9.3.2. The Economic Frame

The economic frame was the most frequent in Twitter, mainly because on the fifth and sixth of February 2015, the twittersphere exploded with tweets talking about who would fund the London bikeshare program. Formerly sponsored by Barclays Bank, then new sponsor was announced to be Banco Santander, a large Spanish bank. More than 73 of the 102 tweets employing the economic frame were referring to this event and happened after it was announced on the 5th of February.

The economic frame in the Spanish case was bolstered by the news of the Banco Santander taking over patronage of London's bikeshare scheme. More than 70 tweets and five print media articles from the print media complex in the sample were about this event. The news first appeared in the sample from the print media complex on the 5.2.2015 via the online version of the newspaper *Expansion* at 13:48 local time. The first tweet to break the news on the Spanish Twittersphere was from the Twitter account of the website *Bolsamania* (not contained in the sample), an online financial news group, about two hours later. Most of the 70 tweets referring to the event contained links to a mass media or specialized blog posts (like *Bolsamania*), with a large majority of them being retweets or pre-fabricated tweets linking to the article from the news websites.

Many of the other print media texts coded with the economic frame explained (sometimes in great detail) changes or decisions taken involving bikesharing. Actors roles were described, the commodity chain referred to, specifics on functionality, costs, contracts governing the provision of the bikeshare, and timelines were often described (see examples: SD8; SSD89; SD131). The tweets with the economic frame also described administrative aspects of bikesharing: which companies are operating bikeshare services (ST4524), that procurement processes have been suspended (ST6509), for example. Tweets about the

personal finances or costs to the individual for the use of bikeshare or membership fees are almost completely absent.

9.3.3. Foreign Cities in the Spanish Case

The sponsorship of the London bikesharing program is not the only mention of foreign cities in the Spanish corpus. In the print media, the Capital of neighboring France is oft referred to. There are common themes in articles focusing on Madrid and Paris. In articles reporting on Paris, air pollution is identified as a problem, and bikesharing is mentioned as a part of the solution (see SD30; SD92; SD93). The same problem-solution combination was found in various articles reporting on Madrid (e.g.: SD26), and even drawing the parallel between Madrid and Paris (SD50; SD147).

These explicit comparisons are not readily found in the Twitter content, possibly due to the necessary brevity. The Twitter content does however make reference to foreign cities, including Paris, but also many others, especially in Latin America. In this way, Twitter content from South America finds its way into the Spanish corpus. Retweets by twitterers in the Spanish time zone of tweets from news organizations in Latin America (ST1516; ST8976) or even from municipalities in Latin America (ST3969) are one simple way content from elsewhere can enter the Spanish Twitter corpus. Similarly, tweets and retweets from geographically Spanish twitterers pick up on topics beyond their own geographic or linguistic borders, as illustrated by the following tweet, authored by a Chilean politician who tweeted a picture of herself with the Mayor of Paris visiting the Santiago de Chile's recently launched bikeshare program, and retweeted by a twitterer in the Spanish time-zone: "RT @Carolina_Toha: Con Anne Hidalgo, alcaldesa de París, visitamos el nuevo sistema de bicis públicas d Stgo http://t.co/UDtIsyd69U" [With Anne Hidalgo, mayor of Paris, we're visiting the new public bicycle system of Santiago].

9.3.4. The Mobility Frame

The three largest peaks in the frequency of the mobility frame on Twitter in the Spanish case took place around the 27th October 2014, the 25th November 2014, and the 1st December 2014. All three of these peaks were due to single tweets that were retweeted, and are not related in their topics to the print media content directly before or after their posting. The first two of these tweets were tweets about bikeshare systems not working, because the bikes in the docs were out of order. The print media content described international delegations investigating bicycle infrastructure, or the legal ambiguities governing bicycles, or the debut of a bikesharing program. The print media article coded with the mobility frame on the 30th of November referred to critique for not further pursuing bikesharing in Mallorca, while the Twitter peak

on the 1ˢᵗ December was about bikesharing in Madrid. Aside from associating bikesharing with mobility issues, these discourses were not related.

Later in the study, in week 16 there was another moment of concurrent rises in the frequency of the mobility frame. While there were numerous newswires and newspaper articles in the print corpus referring a transportation card in the Basque Country that would allow users to access bikeshare with the same card used to pay for trains and busses (SD151; SD152; SD153), the Twitter content was about other topics. The tweets were mainly authored by organizations and not by individuals, while both organizations and individuals retweeted some of the content.

9.3.5. The Social/Community Frame:

The number of items which received this code was very low, nine items in total, three of which were mass media articles, six of which were tweets. All were coded with a positive evaluation, except one tweet lamenting that bikesharing is something for the rich in the USA, linking to an article in the French newspaper *Le Monde* (in French) which covered the results of a recent study. Four of the other tweets were retweets of a tweet from the blog *Ciclosfera* encouraging more bikesharing for better cities, and a link to an article on the blog. The final tweet with the social/community frame comments positively on the Bikesharing program of Buenos Aires, saying that bikesharing is an example of best practice for inclusive urbanism.

Also with this frame, the print media articles had no direct connection to any of the tweets, the first ones were about how handicapped citizens [could] work as mechanics for bikeshare (SD39; SD138), the last one was about a spot which showcased some of the achievements of Ana Botella, then mayor of Madrid, and highlighting bikeshare as one of these achievements (SD150).

9.3.6. Summary: Spanish Cities

The Spanish discourse appears to have accepted bikesharing as a part of city life. Thus, the topics are rarely the same as in the US discourse. Talk of whether these programs should be funded is uncommon, rather the discourse addresses the details of the economic aspects of bikesharing. For example, length of contracts with operators/advertisers is cited as contextual information when discussing how and when to implement changes; or the cost of e-bikes is compared to the cost of those being used at the time. Costs of the programs are certainly cited and discussed, but not in ways that justify their existence, rather in ways that justify changes in how systems work or are operated. This could be due to the fact that as a

more vertical communication, newspaper articles communicate decisions to the public rather than playing an active part in and opening the process of decision making.

Perhaps because of this, a relative high number of the articles are coded with an ambivalent evaluation when compared to the other cases. This code occurs when texts report on the benefits and disadvantages of the programs or changes to them, as is often the case in the Spanish print media corpus. Further, many articles coded with a negative evaluation are coded thusly because they focus on problematic features or management, or simply not up to standards when compared with other programs or the self-proclaimed goals of the programs, rather than condemning the idea of bikesharing in its entirety. Some articles were coded as evaluating bikesharing negatively because they were strongly critical of a bikeshare program. However, in many of these cases, although the critique was heavy, the unstated alternative was not putting an end to bikesharing entirely because the concept as a whole is flawed, but rather improving bikesharing. Even though bikeshare programs in Spain had been discontinued in numerous cases, there was an absence of calls to end bikesharing, the critique was not fundamental. For example: if an article laments the quick and thorough vandalism of bikeshare bikes, it must be coded as negative because it depicts or emphasizes problems with bikeshare which may even be rendered unusable, even though this is seen as an undesirable outcome, because the critique is that the service becomes unusable. Although there is tacit support of bikeshare behind the view that vandalism of bikeshare is negative, it is the pointing out of shortcomings or problems with bikeshare that is emphasized without a qualification that it is still better than not having bikeshare which makes the code of negative appropriate.

The print media content focused on the activities and statements of elite decision-makers, largely politicians and public officials. Delegations domestic and foreign pursuing knowledge of best practices were reported on, the plans of city officials were explained in depth, and the details of bikeshare projects were provided. The Twitter content was a mix between news headlines linking to articles (both in traditional print media and specialized blogs) and personal experiences.

Pre-fabricated tweets from news sites containing links to their articles are common in the Spanish case. In the case of the economics frame for the Spanish case, it can be seen very clearly that the print media complex built the frames which were then subsequently used on Twitter as well. Keeping in mind that the news organizations were also tweeting, providing tweets, and being retweeted, this is one example of clear 'spillover' of print news frames into Twitter.

The content in the corpus of the Spanish case is rather outward-looking. Domestic political processes and events are met with examples of mobility solutions also from outside the European Spanish case culture. In the Print media, Paris and its air-quality problem are often referred to, possibly because of the parallel situation in the Spanish capital, if not the affinity to the neighboring capital. But Paris also has one of the most prominent and oldest bikeshare systems in Europe, which is also mentioned in the print media corpus, in numerous cases together with the air-quality issue.

In the Twitter corpus, the linguistic connection to the rest of the Spanish speaking world is evident. The Twitter corpus is imbued with input from other Spanish speaking parts of the world, many of which also register high levels of Twitter use. The Twitter content creates a window to Central and South America, with many retweets in the Spanish corpus originating from outside Europe. While in both mediums Paris is often referred to, Twitter covers bikesharing and associated politics in Santiago (de Chile), Buenos Aires, Mexico City, and Montevideo, as well as London. While both the print media and Twitter content do not shy away from using foreign cities as reference points, the print media corpus focuses much closer to home, while Twitter picks up on content from other continents. (Tweet ST6778 is a good illustration of this: "Estado del sistema de bicis públicas de tu ciudad comparado con cientos de ciudades globales http://t.co/9rBDQ7VqbN #smartcities #opendata" [The state of your city's bikeshare compared with hundreds of cities globally]). On Twitter, the whole world is a reference point, the print media is geographically more bounded.

9.4. Commonalities and Variation among the Case Cultures

The Spanish case is the most harmonious between Twitter and mass media in that it is more often about how to do bikeshare than whether bikesharing is worthwhile pursuing at all. The discourse in the Spanish case is more routine and detail oriented than in the other two cases. It is not often about whether bikesharing should exist or be funded, but rather about how to implement and manage it. Spanish cities were early adopters of bikesharing, compared to the other cases, so they may have already moved past the discussions taking place in the other cases.

In North American cities, mass media talks a lot about how bikeshare programs should be paid for, and whether the public should pay for them (generally, they should not). Real-estate articles mention proximity to bikesharing stations as a positive characteristic of properties, unique to the North American case. Print media emphasize the economic and environmental frames much more than Twitter. On Twitter, the conversations are often practical, where bikes are, if stations are broken, etc. Furthermore, social issues are much more of an issue on Twitter (e.g. Unionizing, access and provision for lower income

communities). The mass media discourse seems to see bikesharing as an open question: whether it should become a part of cities, while on Twitter it is already being talked about with a certain amount of regularity. The North American print media complex is thus unique in its quintessential skepticism of bikeshare as a policy for cities to support and pursue, while Spanish and German print media content as well as all Twitter cases either show enthusiasm for it, or are busy talking about how, but not whether, to bikeshare.

In German cities, things like the publication of a yearly assessment of cities by the German bicycle lobby drive discussion of bikeshare in the mass media. Bikesharing is seen as *a part of cycling* which is *a part of mobility*, and this provides the discursive foundation for the discussion. Since it is cycling, it is not something new and different, and therefore exciting and newsworthy (a characteristic unique to the German case). It does, however have to be paid for, and journalists are quick to apply the economic lens to suggest that cities or publicly owned utilities should at a minimum break even, but not end up paying for bikesharing projects. At times, this is an unstated assumption or guiding premise, while in other cases it is explicitly stated. Print media actors are generally sympathetic to bikesharing, but it a) costs money, b) can be complicated (you've put a bikesharing station in a pedestrian zone?!). The twittersphere is more of an announcement platform in the German case than the other two. The practical and interactive aspects of Twitter are quite weak in this case, while there is lots of tweeting headlines with links to print media articles.

Compared to the other two cases, the German case more clearly positioned the issue of bikesharing within an existing discourse. This is likely due to two interrelated factors: that bicycling, although a marginalized practice, has a place in German culture as a utilitarian transport option, and that because of this, there are already policy debates, issue arenas, and actors which would be expected to take part in the bikeshare discussion. Neither of these factors can be said to figure in prominently in the other two cases, which explains why they employ a wider variety of frames when discussing bikesharing. This is further elaborated in the discussion section below.

10. Qualitative Analysis: Discourse Analysis of Bikeshare as a local governance policy option[7]

In the quantitative content analysis, frames and evaluations were counted. These were explored on various levels: within a medium (genre) in a single cultural context, between mediums within a cultural context, and between cultural contexts. Considering the results of that analysis, the following section of this research approaches the Twitter and print media content qualitatively. It opens the content beyond the insights gained from looking at the codes, and allows a deeper insight into how the frames were employed as legitimation tools. Drawn into focus is legitimation, how considerations and issues were used to legitimize bikesharing as a practice. In this sense, the focus is the same as above, the employment of frames for presenting the issue of bikeshare serve to legitimize support or opposition to the bikesharing. This is true for bikesharing as a policy option and as a political practice.

10.1. Why Discourse Analysis for evaluating Bikeshare as a local governance policy option?

The productive application of discourse analysis as a method rests on certain epistemological and ontological assumptions, without which the explanatory and predictive application of the results are of little value. Therefore, it is necessary here to ground the methodological approach I will apply here in a somewhat different theoretical foundation. This entails following assumptions about how and why social phenomena exist, and how we come to know about them.

The analysis applied in the following rests on the theoretical foundations of social constructionism. Four premises serve as a foundation for this section of the research and are drawn from social constructionist theories and generally shared by the majority of these are as follows (drawn from Burr 2003):

1. What we know about the world is not objective truth. Our assessments of what happens in the world around us (reality) are internal categorizations and organizations of these events. Thus, our knowledge is limited to being our understanding of reality, which is influenced by the way we and others explain things. Knowledge is a product of discourse.

2. What we know about the world is influenced by the context in which we live. Burr (2003) refers to this as *historical and cultural specificity*. The moment at which we perceive and the place in

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[7] The structure and orientation of this part of the research has its foundations in a workshop entitled 'Analysing Discourse – Analysing Politics: Theories, Methods and Applications' lead by Prof Dr. Michał Krzyżanowski at the 9th ECPR Summer School in Methods and Techniques from the 24th of July to the 9th of August 2014.

which we do it provides a context which influences our understanding. Thus, our knowledge is contingent on what is happening and has happened around us. Discourses play a role in providing these contingencies.

3. Our knowledge of the world is constructed semiotically. Contexts are formed through social interactions in which common truths are constructed. Agreement and acceptance of these common truths are the ways in which our knowledge is maintained. Struggles over what is true and what is false are determinates of our knowledge.

4. Knowledge determines what acceptable and desirable social action is. That is, what our knowledge of the world tolerates or supports, determines what we do and what choices we seriously consider. "Within a particular worldview, some forms of action become natural, others unthinkable. Different social understandings of the world lead to different social actions, and therefore the social construction of knowledge and truth has social consequences." (Jorgensen & Phillips 2002:6)

These constructionist pillars are the foundation for the following approach. Considering the importance of social interaction for constructing knowledge, language takes on a crucial role in the process of creating and applying knowledge. Thus the focus on communication and language based mediums, leading to the present examination of media in the public sphere. In essence, the above *enables* the discourse analytical evaluation of language use for justifications of support for or opposition to social action (policy making and implementation, in the present case) in the public sphere. These constructionist pillars, however, do not imply that a discourse analytical approach is *necessary* or *appropriate*. For that, I take further steps. The following is a brief outline of assumptions that help to demonstrate the appropriateness of a discourse analytical approach.

Thus far, I have posited with the help of a constructionist lens that knowledge of reality is created through social processes. These processes can be, and oftentimes are, semiotic in nature, meaning that knowledge is also constructed between actors, a social process. This knowledge is the way we access reality. Since a main form of social interaction is communication, I look to language as a paramount medium with which knowledge, and therefore, reality is created. Discourse analysis as employed in this research hinges on four poststructuralist assumptions. These assumptions are in some ways reflective of the aforementioned four pillars of constructionism, but with a focus on the agency of social actors.

These assumptions are crucial to justifying language analysis as a valuable tool for discovery. First, as established above, there is no objective social reality which results in language use. We use language to describe reality via our knowledge, which is also informed by language. Thus, language use is not contingent upon a single objective reality. (This is essentially the departure from Saussurian structuralism to poststructuralist thought.) Second, meaning is attributed to phenomena/things by social actors. This means that because there is no objective reality, there is also no objective system of meaning in which language can be rooted; language is not objective, but is created by language use. Third, the reality constructed by language use is organized in discourses. Discourses gain and loose support in discursive struggles. The more support a discourse has in terms of strength over time determines to what extent social realities are shaped according to that discourse. Finally, the former three assumptions lead to the fourth: that discourses shape reality, and can and should therefore be analyzed to determine how social processes interact to determine social action (Jorgensen & Phillips 2002:9–11), such as policy making and policy implementation.

10.1.1. The way of Knowing: Understanding Impacts Politics

Poststructuralist theory advances the position that there is not true meaning in language use; for example, an author's intention is no more real, meaningful, or justified than a reader's interpretation of the text. The social structures that are contingent on knowledge and language serve to determine the spectrum of what is possible. In practical terms, this means that social structures, like class structures, political alignments and ideologies, or economic circumstances *allow* or *enable* social action because understanding and knowledge create, but also rely on social structures (Fairclough 2003:23). This, when aligned with a Foucauldian approach to power, makes power a productive force (see Foucault 1980). (This stands in contrast to the Habermasian understanding of discursive power as a restrictive force, associated with domination).

Specifically for this research, the above tenets determine that how social action leads to decisions about support for policy, the analysis of language use in discourse is an important and relevant tool. Discourse analysis can allow us to identify domination and manipulation through discourse, and it can help us to assess how far public spheres are emancipated and serve to further democratic processes. This is part and parcel of the interpretation of the public sphere in this research: the concept is used as a normative benchmark for assessing the contributions of discursive arenas to deliberative aspects of democratic governance.

The essence of discourse analysis as it is applied here is that the constitution of the social world is a process in which the actions and interactions of social figures constitute reality. Individuals acting and perceiving are the formative agents of reality, and the realities they form determine the context from which they continue to form the world by making choices. This continuous string of choices, and the resulting and ongoing social process of semiosis is that which causes individuals to act in the way they do. Thus, I seek here to explain how the social world is constituted through discourse in a specific instance. Namely, how do social actors constitute the legitimation for supporting or opposing policy related to bikesharing? How do different cultures accommodate bikesharing as acceptable (or not) social practice? What realities are constituted in order to legitimize doing bikesharing or using collective resources to enable it?

Critical discourse analysis (CDA) is a heterogeneous methodology in terms of the way in which it is understood and applied (Jorgensen & Phillips 2002; Fairclough 2003; eds. Wodak & Meyer 2009). Often, these discrepancies exist because the epistemological foundation upon which CDA theories are built covers a spectrum from the strongly normative theories of Habermas to Foulcauldian post-structuralist underpinnings (Forchtner 2011). CDA is united, however, in its accordance with critical approaches; there is a common focus on revealing unequal and unjust power structures which result in inequality.

For the following analysis, I employ normative foundations stemming from Habermas' discourse theory as a reference point (Habermas 1984a; Offe & Preuss 1991; Wodak 1996). An important understanding of the Habermasian public sphere that I assume here is that the public sphere serves as a basis for communicative action is an ideal type. This type of public sphere does not exist (Fuchs 2014b), nor am I aware of convincing evidence that it ever has. Rather, the idea of the public sphere serves as a benchmark against which to evaluate the observable manifestations of communicative endeavors with which worldviews, and thus, interpretations of reality are constructed.

Thus, the Habermasian *ideal speech situation* (Habermas 1984b:177–179) remains just that: an ideal.[8] The concepts offered by this ideal are nonetheless useful. Basic elements of publicness, absence of coercion, sincerity of the interlocutors, and equal inclusivity are concepts applicable for steering communicative endeavors toward a democratic public sphere where participants are not marginalized, censored, or excluded because their input has the potential to destabilize the status-quo and current power structures, nor for any other reasons if earnest, rational, and truth-seeking behavior is followed.

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[8] Habermas disagrees with this appraisal of the ideal speech situation, suggesting that this actually must form the basis for expectations when entering into meaningful interaction. See Habermas (2008:chap. 2).

As described above, the social world is constituted in discourse, by social actors. This refers to meaning-making, or processes of semiosis, in which society takes part as a collection of individuals. The assertion of a certain meaning over another, thus leads to the ability to influence, or create a particular way of interpreting the world. According to Hajer (2009), governance is "first and foremost about the authoritative enactment of meaning." This provides an explicit link between semiosis and power. The effects negotiating meaning directly lead to power outcomes, for example, the distribution of resources. This becomes clear when we consider that political and social theorists have long made the argument that governing is contingent on the socially negotiated meaning of *legitimate* government. Asserting legitimacy to govern is a classic task of those who wield power; it legitimizes their right to make decisions that affect everyone's lives (Tyler 2006:377). The process of semiosis is inherent in power.

I deviate slightly from Hajer's (2009) evaluation of governance as the "authoritative enactment of meaning", because the processes of governance allow for governance to happen without any "authoritative enactment" in theory. I would, however, necessarily apply the phrase the "authoritative enactment of meaning" to government. Policies are the result of negotiated meaning making, a formalized semiotic process reflecting an institutionalized form of how Foucault (1980; 1990) claims that discourse and power shape societal organization. Policies determine how individuals create the social world, for example, by endorsing the right of *legitimized* instances to appropriate resources to use in creating urban transport infrastructure, for example a bikeshare scheme. In a democratic system with accountability of officials to the public, actions (policy enactment) must often be legitimized by semiotic processes which serve to justify opting for one course of action rather than another.

The policy process divides society at numerous points. Through the legitimization of a select few policy-makers who receive the endorsement to enact policy on behalf of society, one such division takes place (Offe & Preuss 1991). This division identifies one segment of society which has special access to the policy process, defined formally through legitimized processes. This is one group of actors in the present study, they represent the addressees of an ideal-type public sphere. Another division creates another group: those who choose to engage in discourse related to bikesharing policy on social media or mass media. For the mass media, the group of active participants is also an institutionalized one, namely journalists, editors, and those professionally associated with mass media organizations. Those engaging in discourse on social media is a more diverse group which does not necessarily share formal or institutional characteristics. These are individuals who may or may not have expertise about the issue at hand, but

who are motivated to contribute to, and thereby co-create, the discourse surrounding this particular policy option. While institutionalized media actors do participate in the creation of the discourse on social media channels, actors without affiliation to media organizations do not have the power to decide when and whether they contribute those parts of the discourse produced by media organizations.

As described earlier (in the section entitled 'Social Media's Contribution to a Democratic Public Sphere'), many theorists have lauded social media as the arrival of a new, democratic public sphere (Papacharissi 2002; Papacharissi 2010; boyd 2011). Other theorists contend that social media is nothing more than another way to carry on participating in politics and deliberating as the public has done in the past (Dalton & Kittilson 2012), or note that the same structural obstacles remain in the way of a democratic public sphere (Fuchs 2014a). One can identify some trends within this debate. For example, Hirzalla *et al.* (2011) argue that while studies focusing on "specific manifestations" of internet use for political engagement fuel optimists, skeptics point to more general trends of internet and social media usage. More on the various theories about the public sphere has been covered above. Here I aim to use those ideas so as to apply the theory of the public sphere to analyzing discourse.

Social media is filled with expectations. This is largely because of the potential which observers notice of what can be done with social media to improve democracy. More recently, these expectations are also fueled by the revelation of also potential negative effects of social media on democratic outcomes. Both of these potentials do exist, and could be important; the jury is still out on whether and how the internet, contributes to a democratic public sphere. Here this question is addressed regarding social media, specifically Twitter. Are the barriers to access that exist in the mass media (Hintz 2009; Fuchs 2014a; Chen 2015) able to be overcome by the flat hierarchies enabled by social media? The following are the quandaries the discourse analysis seeks to explore. Habermas' conception of the public sphere offers us a benchmark which is helpful in the assessment of whether Twitter brings us closer or further away from a public sphere. The guiding question is whether access to the public sphere is equal for all actors? Questions of material provisions for access have been dealt with elsewhere (Sparks 2005; Hintz 2009), not least in terms of a digital divide (Norris 2001). The present section of this research does not contribute to the debate about potential access to the public sphere, but rather accesses the question from the other side: what made it into the discourse? The assessment is in what ways the ideal of the public sphere is achieved or missed. Thus, from this approach, the considerations of equal access to the public sphere are driven by the following questions:

1. Who takes part in the creation of discourse surrounding issues of public interest, such as policies or public decisions on the establishment or maintenance of a bikeshare program?
2. Are all viewpoints, perspectives, and reasons admissible?
3. Where do we find greater variety in arguments, including motivations, reasons, and rationales underlying the argumentation?

For the first question posed above, much work has been done concerning media and access to the public sphere. It has been established that for mass media formats, journalists, editors, and politicians strongly determine who takes part in the discourse (McCombs 2014), and that the extent of this depends on political and cultural contexts (Maurer 2011; ed. Pfetsch 2014) and the orientation of the media organization in question (van Leeuven 2008; Hintz 2009). For social media, it is less clear and there is less research available to answer the question of who (what types of actors) constitute the public sphere.

A new contribution to the knowledge on this issue comes from this research. In political routine periods and regarding more routine policy issues, citizens and civil society are more likely to constitute a larger ratio of interlocutors on Twitter than politicians, media organizations, or government actors. Furthermore, the ratio of citizen and civil society constitution of the discussion on Twitter is higher in the European cases than in the North American cases. (Refer to the actor analysis in the section entitled 'Cross Case Comparison' above, this is also further examined below in the discussion section.)

Foucault (1990) asserts that knowledge is a manifestation of power, and that as a result discourse will always be distorted due to the inherent coupling of knowledge and power. Habermas' theory of the public sphere can also be accommodating of this. Habermas acknowledges that people have differences in their abilities resulting from stratification of educational opportunities and distributions of related material resources. Further, those who have influence over more economic resources determine and shape co-ordination and cooperation efforts in the public sphere, exploiting "publistically effective and politically relevant" influence (Habermas 1989:227–228). These can be understood as eluding to the same kind of distortion in discourse from Foucault that can be attributed to limitations of the public sphere in Habermas' conception.

My point of departure for the analysis is therefore the notion that social media, here Twitter, has the potential to help actors achieve political goals (Murthy 2013). This potential, as argued by Wolfsfeld (2011) is limited in practice to mobilizing support for a given agenda. This is a theoretical example of the limits of the public sphere, which are to again be examined below as regards local policy. Applying a Marxist lens

to the assessment of social media's role in the public sphere, we would be confronted with the notion that capital interests control and shape the extent to which social media contributes to the public sphere in a democratizing way. This is can be manifested, for example, in a gate-keeping function. Practical examples of these theoretical limits include Facebook's censorship of Germany's 'Die Partei' for posting on their Facebook page a comment that made fun of the influence of the European Central Bank's agenda at a moment where political protest against that institution were feared.[9] An example from local politics is Facebook's shutdown of a page used to organize protest in the form of civil disobedience in a Berlin park.[10] These examples suggest that the corporate social media do not allow for the variety and breadth necessary for the accommodation of unhindered, inclusive democratic discourse in a public sphere arena.

10.1.2. Discourse as a (re)constitutive social practice

The term 'discourse' can take on many meanings. Within critical discourse approaches, there are 3 prominent applications of the term (Fairclough 2013:179). The first is semiosis, or the social practice of making meaning. The socialness of semiosis is crucial here: meaning making becomes a social process, where meaning is created between social actors. Social actors navigate interaction and struggle to assert their interpretations of what the meaning of things and events are. This is relevant, because meaning attributed to say, an event or phenomenon, can influence subsequent action. For example, if the members of a municipal government body agree that their city is threatened by health risks due to climate change, there can be many interpretations of what to do next. There may subsequently be struggles over whether this means that more resources should be allocated to prevent further climate induced problems, for example, or that resources should be allocated to improving the ability of health services to address the risks which have been identified.

The second application of 'discourse' in critical discourse approaches refers to the way in which language is used within a conceptually delimited social field. An example is economic discourse. Economics has become a mainstream discourse, making it appropriate to apply economic terms or to use economic principles as a reference for issues which are not intrinsically economic. Talking about what children at school learn in school in terms of 'returns on investment' would be one example.

The third way of understanding 'discourse' in critical discourse approaches is "a way of construing aspects of the world associated with a particular social perspective." (Fairclough 2013:179) This can be linked to ideology or worldview, which informs interpretations of social realities, events, and other social

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[9] http://www.hr-online.de/website/rubriken/nachrichten/indexhessen34938.jsp?rubrik=34954&key=standard_document_54856353
[10] http://www.tagesspiegel.de/berlin/geplanter-kiffer-protest-im-goerlitzer-park-facebook-sperrt-kiff-in-veranstalter/11575916.html

phenomena. An example could be a liberal economic ideology, which provides a theoretical foundation for the idea that privatization of publicly owned assets will provide prosperity for the nation in the medium or long term.

The second version of the term 'discourse' serves to delimit the collection of texts that from which we derive the sample which serves as the data for analysis in the present study. The thrust of this part of the research, however, looks to evaluate how semiosis (the first meaning of 'discourse') happens in the discourse surrounding bikesharing as a policy option within and between two communication mediums, and how this is affected by or determined by the way in which social perspectives inform interpretation (the third meaning of 'discourse') of bikesharing as a policy option within its context.

Understanding the perceptions of the various actors involved in the constitution of this discourse is beyond the scope of this study, and would require data sources beyond the print media and Twitter text items used here. The semiotic process analyzed here is not one between individuals, but rather between mediums: print media and Twitter. The tensions analyzed here are the same as analyzed in the quantitative content analysis above, but this further qualitative supplement serves to help understand the struggle over the framing of bikesharing in a way that explores questions unanswerable through explaining quantitative results. How did it happen that certain frames and evaluations were dominant or not? How is legitimacy for positioning on policy established? How is legitimation constructed, and is this different between mediums?

Legitimation is the task of anyone or any group that would seek to exercise influence in governance processes. It is the response to the question 'why?' In the words of van Leeuven (2008) "Legitimation is the answer to the spoken or unspoken "why" questions—"Why should we do this?" or "Why should we do this in this way?" (van Leeuven 2008:106) Frames are methods of answering these types of questions. If we look at Entman's (1993) classic definition of framing, we can see that framing is used to answer these 'why' questions when problems are identified or conflicts emerge. "Framing essentially involves *selection* and *salience.* 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. Typically frames diagnose, evaluate, and prescribe" (Entman 1993:52) The frame elements following the problem identification serve to justify the questions of 'why.' Thus, frames are tools of legitimation.

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Semiosis: Discursive and Non-Discursive aspects of Reality

While an analysis of semiosis can help to understand how the world is interpreted and how social realities are created, it is helpful to define what aspects of reality are semiotic and which are not. Fairclough (2013) asserts that parts of social practice are semiotic and that others are not, distinguishing "between semiotic and other social elements" (Fairclough 2013:179). Laclau & Mouffe (2001) tacitly divide the discursive and non-discursive with the assumption that not everything can be called into question because the world is simply too vast – some things will be accepted as facts or taken for granted. (This can be seen as analogous to Kahneman's (2003; 2013) concepts of type 1 and type 2 cognition, or intuition versus reason. The largest part of meaning attribution in the social world will remain non-discursive because it is beyond the limited capacities of our reasoned (type 2) cognition.) For Laclau & Mouffe (2001), fixing meaning is the goal of discursive struggles. In their view, however, meaning cannot be fixed permanently. The possibility always exists that meanings can be challenged in a (re)new(ed) semiotic struggle.

To get more concrete in what these ideas mean for policy and discourse, we can use the example of a road. A road is a material reality, it will not disappear or change its physical form according to the meaning attached to it by social actors. However, the role of the road in society is negotiated through the semiotic process outlined above. The meaning attached to the road determines its role in the social world. At the current discursive moment, many roads are associated with movement and mobility, often for motorized transport. Thus, the meaning of 'road' leads to the social reality that it is used for transport, rather than for other purposes. The relation to policy is that due to the dominant meaning of 'road', policy in many countries has been made which allows or obliges the state apparatus to maintain a situation where roads serve the function of transport. If this meaning is challenged, the policy framework may demand that the challenge be sanctioned or removed. This is common in the form of sanctions such as citations for causing obstructions to transport on the road, or even physical violence, in the case of removing challenges to the dominant meaning of 'road' such as protesters or small children. Sometimes, the discursive struggle leads to meanings that encourage other uses for parts of the road, for example parking along the sides of it or installing bikeshare docking stations. These actions too result from the semiotic negotiation of the meaning of a material reality.

The semiotic process is a key theoretical axis for this research project. The success, proliferation, and dominance of certain frames over others in print media and Twitter texts is the empirical manifestation of a semiotic struggle over meaning. These exhibitions in the form of media frames can be operationalized and analyzed as empirical categories as has been done in the quantitative content analysis above. That

analysis is a documentation of aspects of exactly the type of semiotic struggle described in the preceding paragraphs.

For clarity, this research makes no claims to access to individual frames, or frames in thought (Chong & Druckman 2007c), because the only data analyzed is textual and unsolicited. Thus, media frames (or frames in communication) are what is being analyzed and provide access to observation and analysis of the semiotic struggle for meaning. The rise or decline of media frames allow empirical access to semiotic processes. These struggles for influence are connected to the framing agendas and conflicts described by Wehling (2016) and Lakoff (2010; 2014) and the assumption is that there is a connection between mediated frames and human perception. The object of study, however, remains in the realm of media studies, in and between media systems (Hallin & Mancini 2004) and in the context of the hybridity (Chadwick 2013) now applicable to differing extents to all western media situations. The hybrid dimensions explored here are intermedia tensions, within and between two genres of semiotic negotiation.

Both within the mediums of print media and Twitter and between them, meanings are constantly being negotiated and renegotiated. These communication mediums are the genres in which the struggles over meanings and interpretations of reality take place. The result is the realities confronting citizens in their everyday lives.

10.1.3. The Genres:

The following section serves to identify in more detail the communication genres analyzed. This detailed consideration of the components and practices involved in these genres provides a contextual foundation for the analysis and its results. Genres are purpose-based groupings of communicative actions involving many people, often repeatedly (Swales 1990:45–49). What follows is a brief outline of the two communicative genres most relevant to this research.

10.1.3.1. Newspapers (online/offline):

1. Lexis: The type of vocabulary associated with print media is varied. Depending on the audience or target audience, the lexis may be more or less formal. Many elite-oriented newspapers use financial jargon and/or many substantives. These tend to have a large lexis within any given article. Many tabloid and boulevard-oriented newspapers employ vocabulary closer to that which is commonly spoken, using a higher ratio of verbs and adjectives to substantives. These types of publications tend to employ a smaller amount of different terms in their articles.

2. Syntax: Here again, syntax varies depending on audience and target audience. Elite-oriented publications are likely to contain complex noun phrases, tense shifts where appropriate, and relatively few pronouns. Boulevard or tabloid newspapers tend toward shorter and less complex phrases with simple nouns. Specific referral to individuals by their rank or position is common in elite-oriented newspapers, while ordinary citizens are also referred to specifically in working-class newspapers (van Leeuven 2008). Tense shifts are less common, and the past tense is often featured prominently.

3. Visual Text: Typical style of newspapers is columns of text, interspersed with images and/or quotes or emphasized phrases. Because of the focus on legitimation through language use and because of the lack of access to the visual text as originally presented, most aspects of visual text will not be analyzed in this research. The way in which the newspaper texts are accessed (via databases) makes them all a relatively uniform style, with no images, and few aspects of the original 'formal formatting.' Thus, much of the original visual text aspects are not considered in this analysis.

4. Setting: Newspapers like the ones in the sample are to be found almost everywhere. Delivered to homes, sold at kiosks, available in cafes, hotels, airports, offices. People may carry newspapers with them during the day, sometimes sharing them with others, and discarding them anywhere. Discarded newspapers can be retrieved and read after being discarded. They are also often archived in Libraries and other institutions. Newspapers are also read online. This includes, but is no longer limited to desktop and laptop computers; tablets and especially mobile phones are more and more becoming devices upon which people access and read newspaper articles. In short, newspaper articles are read almost everywhere. Other content included in the medium of print media include press releases and newswires. In the present corpus, only newswires and press releases redistributed by major news services are included. Newswires have similar characteristics as newspapers, but are not directly distributed to the public. Newswires and press releases make up a minority of the content.

5. Participants: Newspaper articles are produced by media institutions. These generally have formalized structures, where journalists write and rewrite articles, which may be proofread and then subject to the approval of one or more editors, who may instigate changes in any aspect of what the journalist produces. To be involved in the production of newspaper articles, there are significant and formal barriers to entry. Some type of experience (such as a formal university degree in journalism or related field; it also occurs that those perceived as experts in their fields

are allowed to contribute journalistic content within the confines of their fields) is often necessary for access to becoming a text-producing member of this community. As experience and training take time, the very young are often excluded from this process. Also, business and/or management experience can help individuals achieve positions in the internal gate-keeping of media institutions.

Wealth is also a viable option for entrance into the community of newspaper article producers. Buying the equipment or infrastructure (human and otherwise) necessary to produce media is an option. Those lacking the aforementioned qualifications are generally excluded from taking part in the production of newspaper articles, although some exceptions (e.g.: letters to the editor or guest-authored columns) do exist.

6. Ends: The purpose of newspaper articles can be manifold. Informing, as in disseminating information to the public is one end. Newspapers also often pursue goals other than the dissemination of information. Political persuasion is commonplace, and partisan arguments are often explicitly made in op-ed or feuilleton sections of newspapers. In other sections of many newspapers, selective presentation of information (such as framing) or subjective evaluations of information is less explicit. Political parallelism happens when media outlets consistently publish content favoring a certain ideology or political party. This can be top-down, as when political parties start, support, or associate themselves with media outlets; or it can be bottom up, when a segment of society generates demand for media in line with their political preferences. Other ends include certain agendas. Imposing a certain view of reality through extended exposure to certain ideas can be helped along by the media. Instrumentalization of the media can occur, making newspapers tools for political, ideological, religious, or other agendas. This at times may lead to publishing articles which actively and intentionally misinform. Profit is also an important end pursued by many media institutions. Without sufficient funding, media outlets cease to exist or at least experience severe constraints on their operations. This is likely a motivation of many of the newspaper sources included in this study, that they are entities with the goals, structural and thematic tendencies of commercial enterprises. Newswires are produced for sale to other news organizations or institutional subscribers. Press releases are the exception in that their production is not directly linked with their sale for consumption, but rather are produced with the goal of spreading certain information.

7. Acts: Newspaper articles tend to be dominated by statements. Quotes of individuals, usually identified in connection with the quote itself, are common; indirect speech is also used in the

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place   of   direct   quotes   in   many   instances. The structure of newspaper articles can vary greatly. A subject is often made clear at the beginning, in the headline or sub-heading, which is then provided with context and supporting statements throughout the text. The end of newspaper articles sometimes provide information for further or future possibilities for readers to continue to inform themselves, but often articles end abruptly. Newspapers and Newswire content almost always include a date.

8. Key: The key or tone of newspaper articles tends to be serious and sober. It is generally uncommon to have the tone shift within an article, although joking, sarcasm, cynicism, and optimism do occur, these tenors are in the minority.

9. Instrumentalities: Newspaper articles traditionally are produced printed on paper, but are increasingly common on electronic devices. They can easily be re-mediated, for example by copying, reading out-loud, or 'linking' the texts to or for others. The practice of linking is most common in the electronic form, and then requires an active effort on behalf of those who encounter the link to first follow the link to encounter the text itself. Position within a paper newspaper, or prominence of a link are important determinates of how much attention a text might receive.

10. Norms of interpretation: Newspaper articles occur when they appear in the mediated communications of the media outlet producing the newspaper, in print form or online. Without the proper formatting and placement of newspaper articles, the audience or public would not accept texts as newspaper articles. For the text items in the corpus, it can be observed that the more recently a print media item appears the more value it has. The participants (both creators/producers and consumers of newspaper articles) in this type of communication learn to valorize newspaper articles through their environments.

Learned as part of the system of newspaper article production consumption are also the roles of the participants. The consumers are passive, and the producers are active. One-way communication is the model upon which describes this media. Values on the producer's side include observing and informing from a distance in the interest of objectivity, a selective gate-keeping and filtering function.

The quintessence of the *news* is that it is new. Consumers of news often realize that it has value to be aware of things in the newspaper before others, because it can make them seem interesting and aware, or can give them a competitive edge over others who have only been exposed to older information. By the same token, those producing news are acutely aware that providing

information about events as soon as possible can increase their importance because newspaper article readers begin to rely on them as a source if they prove reliable and fast. Speed of news publication, while a major factor, is not the only norm determining the value of news. The quality of newspaper articles is also created by individuals harboring preferences for detail, perceived accuracy, and thoroughness of the texts.

10.1.3.2. Twitter:

1) Lexis: Tweets are characterized by brevity in their lexis. It is common to abbreviate or simply not to finish words. The lexis of Twitter likely evolved in part from text-messaging on pre-smart-era mobile phones, a situation in which it was tedious to type and there was a word limit. Articles are frequently abbreviated or completely left out, and punctuation can be used irregularly. Acronyms are common; there are Twitter standards, for example *ICYMI* for *in case you missed it*. Specialist 'vocabulary' includes the hashtag labels, which may or may not be complete words.

2) Syntax: Tweets are often in the present continuous or present perfect tense. Commonly, it is asserted that something has happened, with a high degree of certainty. This may be a consequence of the severe length constraints, as uncertainty and probabilities often would entail more explanatory language for which there may be no space in a tweet.

3) Visual text: Tweets are all depicted in the same font on Twitter. Hashtags, @mentions, and links are highlighted in separate color, depending on the settings of the user. The text of a tweet is found to the right of the picture of the source, often a type of portrait or a logo depicting or associated with the source. Most tweets are two lines long, in some cases, there is a picture or video below this, which is a type of attachment to the tweet. Twitter has been known to display certain tweets in a larger font size than others, which has been attributed to the interaction level of the tweet in question. It is unclear if this practice continues, and programs for using or displaying Twitter often negate this extra feature.

4) Setting: Tweets are found on Twitter, mainly. This means that they appear almost exclusively on the screen of an electronic device, be it a computer or other mobile device. Tweets also appear, however, cited on television shows, or in print media. Events have also been known to project a Twitter feed displaying, for example, all tweets with the hashtag of the event.

5) Participants: There is a large segment of Twitter users who are passive, meaning they don't tweet at all. Thus, Twitter content is consumed by many who do not actively produce content.

The gender distribution among Twitter users is roughly equal, but this varies significantly by country. In the US, more males than females used Twitter in 2014, but this was a change from 2013 where females made up a majority (Duggan *et al.* 2015).

Furthermore, Twitter users tend to be younger, the highest concentration of users is found between 20 and 35 years. A higher level of education is also a common characteristic of Twitter users, and Twitter users are more likely to reside in cities than in rural areas.

Literacy is necessary for participation in Twitter, as is access to electronic devices with internet access. Generally, Tweets are public, meaning that most content on Twitter can be seen by any other participant who is interested. There is the possibility for users to block incoming content, as well as to require approval for access to one's tweets. This function is only used by a small minority of users.

6) Ends: Corporate social media such as Twitter have the goal of maximizing financial value. Indeed, as publicly traded companies, they are legally bound to maximize value for their shareholders. Twitter has been shown to be a social media platform which is emphasizes information exchange slightly more than the socially-oriented goals of other SNS like Facebook (Kwak *et al.* 2010; Barbera 2015; Chen 2015). People tend to use Twitter to gather information, a significant advantage being that they have control over the sources of the information *and* can group all this input in one place. Aside from information seeking and exchange, some segments of society turn to Twitter for recreation (Chen 2015), while the desire to share in a medium which can prompt feedback has also been cited (Zhao & Rosson 2009; Wasike 2013). Furthermore, in the face of growing distrust in traditional media outlets, users turn to Twitter to talk about and respond to the way issues are depicted in mass media (Norman 2012; Wasike 2013).

Individuals are not the only ones who use Twitter. Corporations, organizations, and other bodies similarly see Twitter as a useful tool for activities ranging from advertising and awareness-raising to dialogue and customer service. News organizations are very active on Twitter, using it as an extra means to promote and disseminate their material (Holcomb, Gross & Mitchell 2011; Osborne & Dredze 2014). This helps news organizations in their dual goals of spreading information and remaining financially viable, as traffic lured to their websites can result in income through advertising or user fees.

Social media platforms also have an interest in attracting and maintaining users. These platforms, including Twitter, collect data about their users, enabling them to sell this data as a commodity to advertisers or others (Fuchs 2014b).

7) Acts: The speech acts found on Twitter are limited to 140 characters in length, but range from statements to collections of hashtags to graphics created with typeface. Most often, a tweet consists of a brief statement.

8) Key: Different tones are taken on Twitter, ranging from serious and formal to cynical to sarcastic and joking.

9) Instrumentalities: Twitter is first always electronically mediated. This makes it easy to extract out of the Twitter webpage, and remediate it by broadcasting, print, or spoken form. The re-tweet function also makes it very easy to repeat and re-express the content of others.

10) Norms of interpretation: A tweet counts as an act. Twitter content is inherently unitized in tweets, which was defined by Twitter itself when it began offering microblogging services in 2006. The norms of Twitter communication are enforced by the limitations of the interface of the Twitter platform.

10.1.4. Discourse Topics:

The informational content of text is specified by its topic. Topics are conceptual characteristics of texts, which allow texts to be linked via their inherent traits and within their contexts (van Dijk 1991:113). In the case of this research, the conceptual topic is bikesharing in the context of policy options and deliberations surrounding policy. This serves as the macro-topic in the gradation of topics. Within the macro-topic of the policy option that bikesharing schemes represent, this research focuses on this macro-topic in social and mass media. This topic, bikesharing as a policy option as discussed in social and mass media, will be further analyzed as sub-topics, namely the reasoning and motivation cited in social and mass media that serve to justify arguments and sentiment for and against bikesharing as a policy option.

The broader context is a setting in which bikesharing tends to represent a new or recent (potential) change in the physical infrastructure in cities as regards transportation. The dominant form of transportation common in all cultural contexts in this research is the automobile. Thus, the discourse topic upon which this research is focused represents a challenge to the status quo. This challenge is sharpest in the North American and Spanish cultural contexts, and slightly less so in the German cultural context, as cycling for transport purposes is somewhat normalized there. To understand this topic in a structured (global) sense, language users must have a vast amount of knowledge (van Dijk 1991). They must understand that a policy option refers to a potential policy; that policies involve lawmakers and politicians, and that public opinion can be influential. Furthermore, they must understand that policy texts carry meanings, and that these in

turn can affect the distribution and application of resources. This vast knowledge of language users and discourse participants is often taken for granted, but in analyzing discourse, these considerations must be explicitly retained.

The following discourse analysis is incomplete in that it does not assess the *population* of the social and mass media texts, but rather a sample, of relevant texts. The texts analyzed are a selection of texts which fit the criteria of a keyword search for bikesharing or related search terms and have come to be accessible through the databases used (LexisNexis and Factiva, print media) or stream API (Twitter corpus). See the section *Methodology* above for details on the creation of the corpus.

10.1.5. Discourse and the Legitimation of Bikesharing

This analysis is intended to uncover the ways in which support for local governance options are motivated in discourse. What follows is an attempt at providing a structure and organization for the task of "demarcating types of legitimate authority" (Habermas 1975:97). Thus the following guidelines outlining the critical analysis of the discourse surrounding bikesharing aim to discover how legitimations for localized governance action on the issue of bikesharing are constructed. They are based on van Leeuven (2007) and van Leeuven (2008, especially chapter 6).

Important when considering these guidelines or the subsequent analysis is that its point of departure is the text itself. When commenting on the meaning of texts, and focusing on texts themselves, maintaining awareness about the other elements of meaning making is important; the analysis is of the texts, but ventures into the other parts of the meaning making process: the production of the text, and the reception of the text, alongside the text itself (Fairclough 2003). This is crucial because while the only aspect of the meaning making process we can analyze with certainty is the text itself; we nonetheless make statements and inferences about production and reception, other two parts based upon what we do know about them (for example, information in the genre description above).

To determine how an argument supporting or opposing the implementation, funding, or continuation of a bikeshare project is legitimized in discourse, it must be determined where it fits to one of the "four major categories of legitimation" as outlined by van Leeuven (2007; 2008). These categories are *authorization, moral evaluation, rationalization,* and *mythopoesis*. These discursive constructions of legitimacy serve to justify why a course of action is desirable; in a comparative sense, why one option or decision is superior to another. Through discursive processes, societies and sub-groups legitimize social practices by providing answers to the "spoken or unspoken questions "Why should we do this?" or "Why

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should we do this in this way?"" (van Leeuven 2008:105) In the present study, I investigate the *why* question regarding bikesharing schemes. The questions made concrete for the present analysis are thus: *Why should we support or oppose bikesharing? Why should we [not] implement or (dis)continue a bikesharing scheme? Why was it an [in]appropriate use of resources to implement the bikesharing scheme? Why should we [dis]continue the allocation of resources for bikesharing?*

The use of the term 'we' in these questions goes back to the all affected principle. The 'we' is thus not necessarily linked to a Westphalian concept of citizenship and the nation state, but rather a potentially dispersed network of interlocutors, accessing and participating in the discourse not only through access to printed textual materials, but also through deterritorialized cyberspace (Fraser 2007). The 'we' refers to any interlocutor who feels impacted or addressed by the speech acts in question. The object of the discourse is what localizes it, in that any particular bikesharing program exists (or is absent) in a certain space.

The texts in the corpus are approached with the goal of determining how bikesharing is legitimized or how opposition thereto is legitimized. Examples of the various types of legitimation were marked in the texts and subsequently grouped together. From the groups of legitimation types, typical examples were chosen as quotes below to illustrate the way that legitimation tactics were used.

10.1.6. Legitimation

1. **Authorization:** legitimation for a decision or course of action can be derived by appealing to an authority. Authorities come in many forms.
    a. *Personal Authority/Status:* Authorities can be people, such as experts, representatives, or politicians. The legitimation in this case is gained from the status of the person referred to (their claim to authority by being elected, having special knowledge, or having other credentials).
    b. *Impersonal/Normative:* Authority can be derived from non-human normative instances such as common practice, tradition, norms, and/or formal rules or laws. Here the way things have been done, or formal rules created by unnamed or distant actors are invoked to justify the course of action.
2. **Moral Evaluation:** this type of legitimation is based on moral values. Sometimes, this evaluation is simply created by labelling phenomena as *good* or *bad*, words which "freely travel among moral, aesthetic, and hedonistic domains" (van Leeuven 2008:110) and are thus difficult to evaluate based on a justification of why they actually are inherently *good* or *bad*.

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a. *Evaluation:* this form of moral evaluation is the most direct, in some way attributing a judgement of *good* or *bad* to phenomena. Common invocations of evaluation include labeling actors or action as 'evil' or 'righteous'. Moral evaluation can also play out more in the background, as when phenomena are said to be 'sustainable,' 'progressive,' 'undesirable,' 'dangerous' and so on. These can also appeal to norms, suggesting that something is 'natural,' 'unusual,' 'customary,' or 'healthy.'

b. *Abstraction:* this is employed when action is moralized by creating a link from that action to established discourses on moral values.

c. *Comparison/Analogy:* this strategy legitimizes a social practice because it has similarities to other practices that have been established as morally positive or negative.

3. **Rationalization:** while moral evaluation relies on congruence with accepted values, rationalization legitimizes courses of action by linking them to an outcome, or explicitly to the continuation of commonly established positive evaluation. To clarify the category can be separated into instrumental and theoretical rationalization.

a. *Instrumental rationalization*: this is an ends justify means type of legitimation; legitimate courses of action are seen as being "purposeful or effective." (van Leeuven 2008:115) If something is promising, i.e. likely to succeed, then it is good to promote it. Courses of action are legitimized if they lead to an outcome that is accepted as desirable.

b. *Theoretical rationalization:* courses of action are legitimized by theoretical rationalization when they are linked to the status quo; linking them to a truth about how the world is or works serves to justify it or not. In some of these instances, common knowledge based on past experiences or explanations (also scientific) based on likely outcomes are invoked.

4. **Mythopoesis:** this is legitimation through story-telling. A position or course of action is legitimized by telling a story where the particular action, or the results of it are shown to be desirable or undesirable. The two main subcategories of mythopoesis are moral tales and cautionary tales.

a. *Moral tales:* these are tales where positions, actions, and efforts which conform to established (and thus legitimized) social practices and their resulting courses of action are shown to also be good. Different to analogies, these take necessarily on a narrative form.

b. *Cautionary tales:* while the protagonists of moral tales are rewarded for conforming to social norms, cautionary tales are examples of how deviating from socially-acceptable practices will result in unfortunate outcomes.

### 10.2.1.1.	The Economic Frame and Legitimation

The economic frame was the second most frequently used frame in the entire corpus. Often, the use of the economic frame in legitimation employs the principle of *economism*. "Economism is understood as a reductionist mode of rationality whose definitive characteristic is to assert the priority of economic criteria over all other values or modes of reasoning." (Dahlgren 2009)

The excerpt below is from a published letter in a 'letters to the editor' section. It was coded with a negative evaluation and economic frame, and uses an instrumental rationalization to legitimize an opposition to bikesharing. The author of the letter opposes public funding for bikesharing on the grounds that it is not a profitable business venture. This is an example of bikesharing being evaluated on its ability to economically perform as a profitable business, rather than a publicly funded transportation service. Continuation of the bikesharing program in question is opposed because it is said to be leading to an outcome that is undesirable, not making profit. This is the essence of economic frames used to legitimize opposition to bikesharing. Economism is explicit in this example.

- GD5: "*Von Seiten der Stadt war man von diesem „sinnvollen und notwendigen Mobilitätsangebot" überzeugt. Meines Erachtens wurde hier jedoch Zweckoptimismus betrieben, obwohl man eigentlich diese Zukunftsinvestition nach kaufmännischen Gesichtspunkten von Anfang an äußerst skeptisch beurteilen hätte müssen.*" [On the part of the city, there was the conviction that this "mobility service was sensible and necessary." However, in my view, this was simply purposeful optimism, even though what would have been necessary was to make a skeptical judgement of this future investment according to the point of view of what is good business."

In another article containing an ambivalent evaluation and economic and mobility frames, the reporter writes about the start of a bikesharing program in Cologne. The public transport utility in Cologne, also responsible for the bikesharing program, does not expect that it will be an economically profitable undertaking. Nonetheless, the economism here again leads to an instrumental rationalization, in spite of the explicitly stated goal to provide sustainable mobility.

- GD4: "*Ein Geschäft ist mit dem Bereitstellen von Fahrrädern offenbar nicht zu machen. "Bislang konnte in anderen Städten kein Fahrradverleihsystem kostendeckend betrieben werden", teilt die*

KVB mit." [It is apparently not possible to swing a profit by making the bicycles available. "Until now there has been no other bikeshare system in other cities that have been able to be run financially self-sustaining," said the KVB (Cologne's public Transport provider)]

Because bikesharing in the German cultural context is strongly associated with the issue of mobility, this even as a feature of the background context can trump an acute economic frame. As in this article, which frames the addition of the bikesharing program in Cologne as a free added mobility service for its regular customers. Here, the positive evaluation of the bikesharing program framed with mobility is supported by a moral evaluation that it is good to have alternatives to spending one's life in a train.

- GD219: *"Deshalb schafft die KVB 900 Leihräder an und deponiert sie an den Haltestellen. Zur kostenlosen Nutzung für alle Stammkunden, die ihr Leben nicht länger in vollen Zügen verbringen wollen."* [That's why the KVB is acquiring 900 rental bicycles and putting them at public transport stops. For the use of their regular customers, who do not want to spend more of their lives in packed trains.]

Further examples of this is found in a number of articles, where the cultural context of the bicycle as a mode of transport justifies bikeshare programs, even when economic considerations are seen as primary. In the first of the following two selections, the newspaper reporter uses instrumental rationalization, allowing for bikesharing to not immediately garner financial returns if it helps it establish itself as a new way of local transit. In the second example, it becomes yet clearer that the economic goals of a bikeshare station take precedence over the mobility, social, or other goals. In both examples, the goal of breaking even is emphasized:

- GD90: "*Es gehe darum, ein anpassungsfähiges Netz mit lukrativen Stationen aufzubauen, damit sich das Rad als neues Nahverkehrsmittel rechne. Angestrebt werde eine "schwarze Null".*" [The aim is to build an adaptable network of stations, so that the bicycle establishes itself as a lucrative new means of transport. The goal is to break even.]
- GD198: *"Ein Mittel zur Erhöhung der Wirtschaftlichkeit sei es, Stationen mit hoher Nachfrage zu stärken und schwache aufzugeben. Ein anderes Mittel sei eine Preiserhöhung, die ab Januar 2015 greifen werde."* [One means of increasing profitability is to strengthen stations with high demand and to give up on stations that don't perform. Another means is a price increase which will take effect from January 2015.] (This excerpt is in indirect speech in the original, indicating that the content is attributed to someone else.)

The order that the goals of the State of Berlin, as cited in this article, betray the strength of economism present in the German discourse. Here, the legitimation takes the form of authorization; the government of Berlin has formulated demands for a bikeshare program. Listed in first place is the financial criteria, after which come mobility considerations:

- GD115: *"Ziel des Landes sei "ein kostengünstiges, dichtes, benutzerfreundliches System mit minimalen Zugangshürden für (potenziell) Nutzende" heißt es in der Ausschreibung."* [The aim of the state is "an inexpensive, dense, user-friendly system with minimal barriers to access for (potential) users" as it is stated in the tender.]

A commonality between five of the six examples cited above is that they cite the government or a representative of the bikeshare management as a partner of the government, either via direct quote or indirect speech. This reflects the value of authorization or appeal to authority for the purposes of legitimation in this discourse.

This trend does not apply to the association of economic issues with bikesharing on Twitter. The focus on the consumer and what bikesharing will cost them is the way that the economic frame is applied on Twitter in the German cultural context. There is very little talk in the Twitter content referring to the financial costs to cities or institutions, as is the association in many newspaper articles. On Twitter, the discussion is of the costs to the consumer. Here, the word choice legitimizes support for bikesharing through evaluation. The idea of provision ("*stellt…zur Verfügung"* in the quote below) shows the positive evaluation, as does the idea that subscribers cycle for free, being noted as a privilege.

- GT40: *"Ab März 2015 stellt die #KVB 910 Leihfahrräder in #Köln zur Verfügung. Stammkunden radeln kostenfrei. http://t.co/FUriOZDCRl (mer)"* [As of March 2015, the #KVB will provide 910 rental bicycles in # Cologne. Regular customers cycle free of charge.]

The few references to non-individual financial costs of bikesharing use a moral evaluation to legitimize support for bikesharing. Here, the word '*spendiert'* suggests a donation, lauding what is seen as a charitable act on the part of the transport utility, and the moral evaluation that that is good is said with the exclamation 'Yay!' and the hashtag #iLike.

- GT29: *"Yay! Ab 2015 spendiert die KVB 910 neue Leih-Fahrräder für Köln http://t.co/PTnZebEeC0 #iLike"* [Yay! Starting 2015 the KVB will donate 910 new rental bicycles for Cologne http://t.co/PTnZebEeC0 #iLike]

10.2.1.2.   The Mobility Frame: If the Economic Frame Allows

The mobility frame was quantitatively dominant in the German content. Possibly because cycling as a means of transport in the German cultural context already is established as a concept, the focus goes much more quickly to how well bikesharing systems work. Thus, many articles employing the mobility frame evaluated bikesharing positively while still expressing constructive criticism with the goal of making the systems work better. Often, even with the mobility frame it can be observed that economic considerations are rarely completely eclipsed from the discourse.

Even when firmly framed with the mobility frame, for example with mobility being a main and explicitly stated goal of bikesharing programs, economic aspects make their way through. In the article containing the following selections, the focus was on whether the bikeshare service fulfills the desired function of transporting students around campus. (The article also uses authorization to achieve legitimation by specifically referring to representatives of the bikeshare program by name and title, while referring to students as 'students' or with their names.)

- GD145: "*DB Rent stellt die Fahrräder zur Verfügung, die Studenten zahlen mit dem Semesterbeitrag 2,38 Euro und können die Räder dafür täglich eine Stunde am Stück nutzen. Doch Studenten klagen, dass auch zwischen den Campus-Standorten das Pendeln nicht zuverlässig funktioniert.*" [DB Rent provides the bicycles, the students pay 2.38 Euros with the semester contribution and can use the bikes for one hour at a time. But students complain that commuting between campus sites is not reliable.]
- GD147: "*Die Idee, Studenten kostengünstig über den Semesterbeitrag Leihfahrräder zum Pendeln zur Verfügung zu stellen, ist gut. Aber 45 Räder sind einfach zu wenig.*" [The idea of providing students with bicycles for commuting at low cost through the semester contribution is good. But 45 bikes are just not enough.]

The following examples use normative authorization to legitimize bikesharing. The mobility frame is dominant, but it is made clear that the goal of mobility is valuable only if the goals of economism are first established:

- GD82: "*Das System Call-a-Bike sei eine gute Lösung für 'das Dazwischen': Wenn es nicht genügend Fahrgäste gibt, die weitere Busfahrten wirtschaftlich rechtfertigen, aber eben doch den Bedarf.*" [The call-a-bike system is a good solution for the 'in between:' if there are not enough passengers to economically justify further bus rides, but nevertheless the demand.]

- GD138: *"Die Kosten seien auch der Grund für die räumliche Begrenzung."* [The costs are also the reason for the coverage restrictions.]

10.2.1.3. The Mobility Frame as Mobility

It also happens in the German discourse that the mobility frame is without clinging to financial legitimation of bikesharing. Oftentimes, it is firmly embedded in discussions about what mix of transport options should be made available. Here personal authorization serves legitimation purposes in a newspaper interviewed the CEO of Cologne's public transport utility:

- GD106: *"Wir steigen im nächsten Jahr mit unserer dritten Flotte, der Fahrradflotte, in den Markt ein. Ein deutliches Zeichen dafür, dass wir der eine Mobilitätsdienstleister in Köln sein wollen, der alle Verkehrsträger miteinander verknüpft: Neben Bus und Bahn bald schon die Leihräder, und das noch verknüpft mit Carsharing-Angeboten - alles buchbar aus einer Hand."* [We are entering the market with our third fleet, the bicycle fleet, next year. A clear sign that we want to be the one mobility service provider in Cologne which links all transport modes: next to bus and train soon the rental bikes, and that all linked to carsharing offers - all bookable from a single source.]

This approach can also be found on Twitter. In this tweet, bikesharing is being legitimized as a part of a group of mobility options – through expert authorization in that it is included in a study of possible mobility options. :

- GT90: *"Radio Koeln Mobilität: Studie zur Fortbewegung geplant: Carsharing, Leihräder oder öffentliche Verkehrsmittel, wie… http://t.co/RtDNnVRJzh"* [Radio Cologne Mobility: study planned for the move: Carsharing, rental bikes or public transport, how...]

In some cases, the brevity of tweets may have discouraged a full legitimation of a pro or con position on bikesharing, but in other cases it led to clear legitimation, as in the following tweet that rationalized the support of a bikesharing and carsharing through the ends of their being used:

- GT61: *"Wo es flexibles Carsharing und Leihfahrräder gibt, liegen die Nutzeranteile schon bei fünf bis zehn Prozent. - http://t.co/V1ksFidw6E"* [Where there are flexible car-sharing and rental bicycles, the share of usership is already between five and ten percent.]

In other cases, legitimation to bikesharing is given simply through it being handled as a normal object, subject to the same rules as any other pieces of property. In cases like this, the theoretical rationalization

is applied to bikesharing without much ado: it is legitimate property that one would want to use and others desire. Here, it happens to be the object of a theft and getaway vehicle all in one:

- GD109: *"Auf besonders dreiste Art und Weise hat ein unbekannter Mann am frühen Samstagmorgen ein MVG-Leihrad geklaut. Wie die Polizei mitteilte, hatte ein 23-Jähriger an der Verleihstation am Lessingplatz gegen 3.25 Uhr gerade ein Rad entnommen und beiseitegestellt, um weitere Fahrräder für Freunde auszuleihen. Währenddessen lief ein Unbekannter vorbei, schnappte sich das beiseite gestellte Rad und radelte, ohne ein Wort zu sagen, davon."* [In an especially haughty way, an unknown man stole an MVG rental bike early Saturday morning. The police reported that a 23-year-old had just taken a bike out at the hire station at Lessingplatz at about 3.25 am and set it aside to borrow more bicycles for friends. Meanwhile, an unknown man ran by, grabbed the bike, and pedaled off without a word.]

The results 'Bicycle Climate Test' of a German bicycle lobby organization, the General German Bicycle Club (ADFC) was the topic of numerous newspaper articles. It prompted reporters to seek statements from local club officials, and responses for politicians. The ranking did not strongly favor any of the municipalities reported on, so the officials of the ADFC used it as a platform to legitimize cycling measures in general, including bikesharing, using moral evaluations: if there is no bicycle infrastructure or bikeshare, that is bad.

- GD163: *"Die Radfahrer stellen einen Stillstand fest", sagt Konrad Krause, Geschäftsführer des Allgemeinen Deutschen Fahrradclubs (ADFC) in Sachsen."* ["Cyclists have noticed that things have come to a standstill," says Konrad Krause, Managing Director of the General German Bicycle Club (ADFC) in Saxony.]

On the other hand, comments from local authorities tended to use theoretical rationalization to establish that the criticism of the bicycle infrastructure or bikesharing programs was not appropriate; as in this example where the spokesman of a governing party asserts that the situation cannot be poor because all planners do their best.

- GD163: *""Ich kann die Kritik nicht teilen", sagt Thiele. "Es geben sich alle Verkehrsplaner große Mühe, ausgewogene Lösungen zu finden.""* ["I cannot share the criticism," says Thiele. "All traffic planners put a great deal of effort into finding balanced solutions."

This type of balance was used to by journalists to show both sides of the story. Often, as in the article above, the activist from the ADFC had a quote featured first, closer to the news of the study. The last

quote was then given to somebody from the city government, pitting the two against one another and using authorization in an appeal to personal status to legitimize the statement from public officials more than the activist's statement.

The 'Bicycle Climate Test' which prompted numerous articles in the print media was virtually absent on Twitter as regards bikesharing. The one tweet in the corpus that is the exception uses the authority of the organization responsible for the test to legitimize bikesharing as one of a variety of measures that the tweeter evaluates as good:

- GT98: *"#adfc #Fahrrad #klimatest #Bochum:Leihräder, ÖPNV Mitnahme, geöffnete Einbahnstraßen und Radwegweiser sind die etwas besseren Werte (<4)"* [#adfc #bicycle #climate-test #Bochum:rental bikes, bringing with on public transport, opened up one-way streets, and bikepath signage are the somewhat better values(<4)"

10.2.1.3.1. Bikesharing as Mobility...but in other cultures

A number of texts using the mobility frame clearly paint the practice of bikesharing as a foreign phenomenon. These texts tend to portray bikesharing as more sensational and often connect it with overarching processes of change, quite different from when it is described in the German cultural context, suggesting a somewhat normalized understanding that cycling is not accepted as a tool for utilitarian transport in in foreign cultures. In some cases, bikeshare programs are compared with other modes of transport, such as in the following article about cycling in Paris, which expresses surprise that people do use the bikeshare program in a city known for chaotic automobile traffic. This example shows the mobility frame being employed in a normative authorization which establishes legitimacy by appealing to common practice:

- GD110: "*"Vélib' hat die Stadt verändert", sagt Mélina, die - wie 283 000 andere Pariser - ein Jahresabo für die grauen Leihräder hat und sie regelmäßig für kurze Etappen benutzt. Jeden Tag werden die Räder im Schnitt 170 000-mal ausgeliehen."* ["Vélib' changed the city," says Mélina, who, like 283,000 other Parisians, has an annual subscription for the gray bicycles and regularly uses them for short trips. Every day the bikes are lent on average 170,000 times.]

Theoretical rationalizations can mix with other forms of legitimation, when presenting a more complicated perspective on bikesharing using the mobility frame. The following is an example of this, the article weighs positives and negatives arguing for making bikesharing and cycling in general, safer, but it is currently dangerous. The narrative presented here suggests that using bikeshare is so dangerous that

only special abilities, or in lieu of that, ignorance could lead to its use. The evaluation is 'danger' and the mythopoesis describes those who do engage in this behavior as deviating from the norm.

- GD150: "*Fahrradfahren in London ist gefährlich: Es gibt nur wenige Radspuren auf den Straßen, oft sind sie sehr schmal, manchmal hören sie plötzlich auf. Deshalb sausen auch fast nur Männer in spezieller Fahrradmontur durch London - oder Touristen auf Leihrädern, die nicht wissen, worauf sie sich da einlassen.*" [Cycling in London is dangerous: there are only a few lanes on the streets, often they are very narrow, sometimes they suddenly stop. As a result, almost only men in special cycling gear race through London - or tourists on that do not know what they are getting into.]

Here we see mythopoesis at work again, and again it tells a tale from somewhere else, somewhere outside of the German cultural context. Positively framing bikesharing as a pure mobility solution, the tail is of utopian mobility leading to a quick and independent public.

- GD111: "*Heute wird kaum noch geraucht, und die Pariser fahren wie besessen Fahrrad. Es gibt überall Entleihstationen. Die erste halbe Stunde ist kostenlos, und niemand muss die Autos von deutschen Touristen demolieren. Die Pariser fahren in einem Affenzahn von einer Entleihstation zur nächsten, schließen das Rad an und leihen sich ein neues (um im Rhythmus der kostenlosen halben Stunde zu bleiben). Die Bevölkerung ist so gut im Training - in fünf Jahren wird ein Pariser die Tour de France gewinnen.*" [Today, hardly anyone smokes, and the Parisians ride bikes like crazy. There are rental points everywhere. The first half hour is free, and no one has to demolish the cars of German tourists. The Parisians travel from one rental station to the next at breakneck speed, return the bike and borrow a new one (to stay in the rhythm of the free half an hour). The population is so good in training - in five years, a Parisian will win the Tour de France.]

Looking to other cultures for perspectives on potential solutions at home does not stop with the mobility frame. The seldom occurrence of the environmental frame is also employed in observing what policies are being used in other cultures to address issues that also has effects in the German cultural context. In this example, authorization via attributing plans to the mayor of Paris are combined with rationalization (for climate purposes, as well as 'livability') to legitimize bikesharing as an appropriate policy goal.

- GD108: "*Die Bürgermeisterin will vor allem sozial Schwachen auch finanziell Hilfestellung leisten, um vom Diesel loszukommen. Auf Leihfahrräder, Elektro-Mietautos oder die öffentlichen Verkehrsmittel sollen die Menschen umsteigen. Die britischen Touristen Ali Rhind und Paul Johnson finden das "eine gute Idee". Die beiden Besucher aus Newcastle sind sich einig: "Das macht Paris*

lebenswerter."” ["The mayor wants to provide financial support to the socially weak, in order get away from diesel. People should switch to bicycles, electric cars or public transport. The British tourists Ali Rhind and Paul Johnson find it "a good idea". The two visitors from Newcastle agree: "This makes Paris more worthwhile."]

This type of observation is not exclusive to the domain of print media. On Twitter as well, solutions from afar are observed, legitimation being provided by authorization in that the (foreign) city itself has the goal of fighting climate problem by integrating bikesharing into its mobility policy.

- GT106: *"Green-City? Mit Leihfahrräder und E-Taxis (v. BYD) will Shenzhen der Umweltverschmutzung a… http://t.co/NEPN6tZxpl http://t.co/ZFYtxrgoi5"* [Green-City? With rental bikes and e-taxis (v. BYD), Shenzen has environmental pollution i… http://t.co/NEPN6tZxpl]

Or again in this tweet, where commonly discussed barriers to successful bikeshare use are addressed and bikeshare is thus legitimated by the theoretical rationalization that these may be overcome.

- GT47: *"@zedbeeblebrox Ich war grad in Madrid. Die haben ausschließlich E-Bikes als Leihräder an den Stationen. Weil es dort so hügelig ist. ;-)"* [@zedbeeblebrox I was just in Madrid. They only have e-bikes as rental bikes in the docks. Because it'sso hilly there. ;-)]

10.2.1.4.   Summary: Legitimation in the German Case

The large majority of the Twitter content from the German case contained links, most of which led to mass media websites. This is indicative of the strong linkages between the Twitter content and the print media content, and is not an exception when it comes to legitimation processes. Legitimation through appealing to authority was a common thread in Twitter and print media content. A difference was that personal and status authorization was more heavily used in the print media, while impersonal authorization was more commonly found in the Twitter content. While the print media featured numerous articles driven by speech acts like the release of the ADFC Bicycle Climate Test, Twitter users less often used the report to legitimize bikesharing. This may be indicative of print media always on the lookout for news, and in the German case, the decentralized nature of population distribution leads to a news structure that favors news which is applicable locally. This was the case of the Bicycle Climate Test, because it featured results for 468 municipalities all over Germany. The test further delivered a perfect cause to take a position on bikesharing, as that was what it asked its more than 100,000 participants to do. The semi-scientific workup and presentation of the results to the press offered grounds to for

legitimation through authorization, because the organization responsible was perceived as having expert knowledge.

Especially when legitimizing a position on bikesharing with economic considerations, print media and Twitter diverged. Print media's focus was on the economic costs to institutions such as municipalities or businesses, while in the Twitter content, the emphasis was on the financial costs to individuals, usually as consumers.

Past these differences, the legitimation processes fed into one another, although to say they were largely similar would be wrong. The legitimation processes differed greatly also due to the structures of the different formats. The brevity required for Twitter would seldom be convenient for a personal authorization, because writing out the name and position of the individual in question, as is common practice in the newspapers, would take up most or all of the 140 possible characters. An accompanying statement or message would thus be difficult.

Using the legitimation tactic of rationalization to support bikesharing policies or projects drew the discourse to refer to examples outside of the German cultural context, especially when suggesting the transformative potential of bikesharing programs. This was the case in print media, but also occurred in the Twitter content. It is a reflection of the meaning of cycling in the German cultural context, which is more established than in the other two cases. Thus, the addition of bikesharing to a cityscape is not likely to produce as much noticeable change and be less of a cause for controversy and debate. This reflects two aspects of bikesharing in Germany: first, that its implementation would add to the already existent practice of urban cycling, rather than introduce it, as is arguable the case to a greater extent in the other cases. Second, that in Germany, there are fewer large bikeshare programs, partially as a result of there being fewer large cities.

Economic considerations are unequally more important, other considerations are subordinated to economic considerations. This creation of reality strongly reflects the meanings asserted by the print media, that the main basis for a decision is based on economic considerations. In this way, the print media is successful in asserting the meanings which lead to the common basis for perception of reality.

10.2.2. The North American Case

10.2.2.1. The Economic Frame and Legitimation

Economism is also readily apparent in the legitimation of support for and opposition to bikesharing in the North American case. In numerous instances, economic goals are clearly positioned above all other goals, for instance in the following tweets:

- NT774: *"Why don't more employers offer free @bikeshare (cheaper than cabs), free gyms & other bennies to keep hcr costs down?http://t.co/JIFX6NHFsO"*

- NT14128: *"MoCo Says Capital Bikeshare Exceeded Revenue Projections In First Year http://t.co/OBR1UMunua #md #feedly"*

In the example above, instrumental rationalization is used to justify the argument that employers should offer bikesharing to their employees. The goal in this case is lower costs, specifically healthcare costs to employers. Thereby, bikeshare and other ways of achieving better health are instrumentalized to achieve lower financial expenditures. Health itself in this case is instrumentalized; it is not a value in and of itself to improve or achieve good health, rather health itself is portrayed positively only insofar as the health care (hcr) costs are kept to a minimum. Not exclusive to Twitter, this type of content appears in the print media corpus as well. Here an example from a local newspaper:

- ND266: *"Compared to traveling by car, Coast says riders during its first month of operation saved $3,206 on gas, reduced carbon emissions by 4,874 pounds and burned 221,137 calories."*

- ND445: *"Firstly, massively promote the bikeshare scheme. Two-wheel transport would limit damage to road surfaces. Citizens would be healthier, thus cutting costs to the health service."*

The order of presentation of the effects of using the bikeshare program ('Coast') is a rationalization, listing the central goal first (legitimizing use of bikesharing), and backing it up with the evidence (instrumental rationalization) that it saves money, saves the environment, and is healthy. The choice to list the frames in this order, economic, environmental, and then health/safety, reveals their perceived priority. The idea that bikeshare is only worthwhile if it is financially viable, in other words only if it is an income generating activity, or if it at the very least does not cost anything, is very pronounced. In the print media this was the case:

- ND200: *"He said he is confident she will help Bike Miami Valley become a "self-sustaining" organization. Launching in the spring, the bike-share program will provide customers with about 200 custom bikes*[…]*"*

- ND395: *"The bike share program is a private-public partnership, and the business model relies on corporate sponsorship. Business and property owners may participate and support the program through sponsorship, adopt-a-station, and the purchase of memberships."*

A popular method in the print media corpus of strengthening the instrumental rationalization of cities providing bikesharing if it is profitable or at least cost-neutral is adding authorization through an appeal to status authorities, as is the case of mayors in the following two extracts. (This practice can be found on Twitter as well (see below), but is less common.)

- *ND34: "When the Citi Bike program was introduced, then-Mayor Bloomberg promised it wouldn't cost taxpayers any money."*
- ND58: *"A major reboot, announced on Tuesday by Mayor Bill de Blasio's administration, seeks to make Citi Bike far bigger -- and, most importantly, self-sufficient -- by giving its troubled operator, Alta Bicycle Share, a big infusion of private capital and reorganizing it under new leadership."*

The emphasis on financial self-sustenance is common in the mass media. If bikeshare does not live up to this goal, then it is quickly deemed an undesirable pursuit. The above examples illustrate this, legitimizing it through rationalization. While less dominant, parts of the discourse on Twitter also used rationalization to represent this position:

- NT126: *"Do investments in #bikesharing and separated bike lanes pay off? http://t.co/9kmLLKheNs"*
- NT11612: *"This price increase @bikeshare says to me that every new bike does not pay for itself."*

While it was common to question bikeshare programs' ability to generate financial value and this aspect emphasized as a basic reason for its existence, there were very few examples of other frames being used as a fundamental criteria to determine whether bikesharing is an appropriate practice. In the print media, there were rare examples of the contrary, citing the rationalization that the service of bikesharing is in itself worth spending (public) financial resources on:

- ND137: *""Folks in Windsor Terrace and Kensington don't want to wait five years to get involved," councilman Brad Lander said. "If it takes public resources to achieve the expansion we want to all neighborhoods regardless of income, it's public transportation infrastructure and we should do it. What do we need so that it doesn't take 20 years to build out the bike share network?""*

- ND210: *"Bart Yavorosky, executive director of Pittsburgh Bike Share Partnership, said foundations ideally would support the project indefinitely, letting Pittsburgh become the first American city that treats its bike-share system as a public service, rather than a money-making venture."*

The positions presented in these quotes are calling into question 'the way things are,' and making appeals to change the status quo. In these examples, it can be observed that arguments based on social justice are in the position of challenging the dominant discourse. This is a challenge to the interpretation of reality that services should only be offered to those who can afford them, and transport schemes are only appropriate if they are viable business ventures.

When presenting arguments for using public resources for enabling bikesharing, the newspapers used authorization in the form of an appeal to personal authority, as can be seen above, rather than rationalization as was common for rationalization forms of legitimation. The indication here would be that it is easier for editors and journalists to warrant the expenditure of public monies for bikesharing if there is the promise (or at least the goal) of earning that money and more again in the future, while when it is simply presented as expenditures, the print media actors avoid presenting the argument as their own, shifting responsibility for the content (which has nonetheless been selected and emphasized by print media actors) to those who have made the statements initially. This creates distance from the argumentative positioning of journalists and editors, and in the end is a weaker way of presenting the position. The responsibility for determining whether the source is to be taken seriously or believed is thereby shifted from the author to the reader. The journalistic reluctance to even tacitly adopt this position indicates that the realities suggested are contrary to existing consensus on the meaning of access to bikeshare.

Contrarily, in the Twitter corpus, rationalization was often used to legitimize bikesharing. Though the focus of discussions of the economic consequences of bikesharing on Twitter is more on the finances of the individual, rationalization is also found to be used to justify institutional investment of financial resources in bikesharing programs. In the following two examples, rationalization is used combined with authorization (in both of the below examples, Mayors are cited as the source for the statements). Here, a functioning bikesharing program represents the ends, while the finances represent the means. Rationalization along these lines is more common on Twitter than in the print media content, where bikesharing is more often a means than an ends.

- NT6851: *"RT @ReneBruemmer: Montreal will pay $2.9 million a year to keep Bixi running in the city, Coderre says. #Polmtl #bixi #BikeShare"*

- NT236: *"#bikeshare budget request $600K for Central District, Yesler Terrace, Little Saigon, says @mayor_ed_murray"*

These types of arguments can also be found simply legitimizing through positive evaluations of policy by individual citizens.

- NT11463: *"Glad to see @cityofeugene @LaneTransit #bikeshare was recommended as a priority for state funding http://t.co/ZLkRBpKS5d"*

Also when seen negatively in the Twitter discourse, bikesharing remains the ends, and the (mis)allocation of public financial resources the means.

- NT12081: *"#bikeshare project in Orange County fails, forks out $800 in taxpayer funds per bicycle ride: http://t.co/u8g9rZ29VH"*

- NT11624: *".@BikeBikeYYC Montreal taxpayers got screwed out of millions with #Bixi. Bikesharing is a scam that #yyccc need not participate in"*

But this is not always the case. The rationalizations on Twitter also extend economism based arguments, so that the rationalization of public investment means it enables private income generation. This indicates the predominance of realities that privilege economic considerations above others.

- NT10366: *"Business Appears to Be Picking Up Near Capital Bikeshare Stations http://t.co/pQ1dLr1svP #MobilityLab #DC #Bike #BOD (bike oriented dev?!)"*

- NT11189: *"Reminder that #bikeshare means business, even for local bike sales via @DNA_wpb http://t.co/FPIaSURTKp"*

As opposed to much of the print media content, the Twitter content presents the possibility which is almost completely absent for individuals to legitimize bikesharing from their own perspectives. Here, the economic aspects of bikesharing are valued differently than in the public or institutional financing setting. The experiences of the individual can be construed as legitimation for bikesharing, but are more likely intended to rationalize the choice of the individual to use bikesharing.

- NT9512: *"2 years into my @bikeshare membership and I've taken 1,023 rides (1.4 rides a day) for a total of 16 cents per ride #solidinvestments"*

- NT3006: *"CEOs of @Equinox bought @CitibikeNYC. 1 year bikeshare membership still cheaper than 1 month at my favorite gym. http://t.co/esSrVKTMVY"*

The personal appeal and the personalized rationalization formulations used for legitimizing bikesharing on Twitter are aimed more specifically at legitimizing an individual in her choice to bikeshare, rather than the social practice of bikesharing. In this framing of the issue of bikesharing, the question is brought down to an individual level and the affected financial choices. Institutions, including news organization, public bodies, and private companies tailor the communication to the individual level.

- NT19201: *"Will you be using the #linkDYT #bikeshare? $65.00 a year doesn't seem too bad, will you be riding? http://t.co/4Lhl0FsUFh"*
- NT14842: *"Thanks to #bikeshare, #Indy man's #commute costs 13.6 cents per mile, 20 cents a trip >> http://t.co/l3DPcinTQo http://t.co/E7tRV9viZM"*

Another aspect of the Twitter discourse that is all but absent in the print media content is the direct struggle for legitimation of support for or against bikesharing. This takes place in a dialogic format made possible by structure of Twitter. While the majority of contributions in this line do not meet the normative standards of the public sphere, the potential is created and in some instances communicative space on Twitter is used for type of exchange. The following are examples of responses or parts of conversations on Twitter that were recorded in the Twitter corpus:

- NT342: *"@hoaxie whereas the money spent on a bikeshare program could open up more actual bike lanes"* (Rationalization –a more desirable outcome is possible departing from status-quo)
- NT1824: *"@vxgxn @LowHeadways Yes, and in terms of transit systems, @bikeshare has been a huge success and could be hugely expanded at little cost."* (Instrumental rationalization – ends: low-cost transit; means: bikeshare)
- NT2908: *"@bpapa Citibike is more widely-used than any other bikeshare program in the world. They should be able to make up revenue on volume."* (Theoretical rationalization – because a system is widely used, it should be profitable)
- NT11444: *"@MrTinDC @bikeshare I'd gladly pay an extra 10 bucks a year for more infill stations, quicker! @bikepedantic"* (Rationalization – if membership fees for bikeshare rise, the service will be better through a denser network of stations)

- NT18721: *"@mrjasonray a great question for @gabe_klein: why haven't any e-bikeshare systems emerged yet? My guess is considerable cost."* (Rationalization – outcome of e-bikeshare programs is hindered by high costs)

The ways of legitimation linked to economic concerns in the North American case are overwhelmingly rationalizations, specifically instrumental rationalizations. Bikesharing is more often than not endowed with the status of a means to achieving some kind of economic performance more so than achieving transportation goals. The financial question becomes more personalized on Twitter, as opposed to the institutional-level approach to funding questions in the print media. Thus, the level at which the discourse focuses is a different one, individual bikeshare use rationalization is focused on more on Twitter while bikeshare service provision is rationalized (or not) in the print media.

10.2.2.2. Health and Safety Legitimation

Legitimizing bikesharing as a practice either on an individual or city level reveals different legitimation tools when linked to health and safety concerns. Here, especially the use of mythopoesis in the form of cautionary tales is preferred. This is especially the case for media industry sources both in print media and on Twitter. The following tweet is a pre-fabricated tweet from a local television station, employing a single person's experience is emphasized in the subtle suggestion that this could happen to anybody. This is the case in spite of the very safe record of bikeshare as a whole.

- NT10075: *"Man Suffers Traumatic Injuries in Bikeshare Crash via @nbcwashington http://t.co/Xln1rbilo1"*

This serves to strengthen the meaning attribution in the North American case that 'playing in the road' is dangerous, and that this applies to cycling. Cycling has the meaning and status of a children's toy, and roads have the meaning of conveyors of motor cars. Thus, the struggle for the meaning of bikeshare is here being carried out by asserting the dangers of 'playing in traffic,' which is the meaning attributed to transporting oneself by bike(share). The practice mythopoesis by telling cautionary tales is also to be found directly in the print media corpus. In this excerpt, the result of "playing in traffic" is hurting others:

- ND324: *"A Citi Bike employee plowed one of the operation's bicycles into a Manhattan man riding a motorcycle on the Lower East Side, seriously injuring the victim's foot, a new lawsuit claims."*

Mythopoesis connected with health and safety concerns also gets involved with the bicycle helmet debate, which bikeshare programs are also subject to. In this example of a cautionary tale, a man ran into a bikeshare dock while riding a bikeshare. He was not wearing a helmet, and attempted to sue the city

and the bikeshare provider for not making it mandatory to wear a helmet while bikesharing. Although the coverage of the case was not sympathetic to his lawsuit, there is a clear cautionary tale that came through in the coverage: neglecting to wear a helmet while using bikeshare carries with it severe consequences.

- ND71: *"Business consultant Ronald Corwin says he lost his sense of taste and smell and suffers from depression and diminished ability to focus after he ran into an unpainted barrier marking the boundary of a Midtown docking station in October of last year."*

The Twitter content, also citing research and science, portrayed bikesharing as a safe activity. There were numerous tweets using authorization as an appeal to expert knowledge citing the safety record of bikeshare, as in the following tweet:

- NT3945: *".@MinetaTrans study: #Bikeshare users rarely/never wear a helmet, yet stats show bikeshae safer than regular cycling http://t.co/eiSdYnpocf"*

There were few accounts of accidents or other cautionary tales of actual events recorded used to warn of the dangers of bikesharing on Twitter. There were however precautionary tales and judgements of behavior that was perceived to be likely to lead to danger or injury.

- NT8962: *"Seen on my walk home: guy in a suit on a Bikeshare bike, eating a sandwich with one hand, headphones in, and no helmet #darwinawards"*
- NT10455: *"Back in DC and I've seen an idiot riding a bike on the train platform and one riding with his kid in the basket of a bikeshare, no helmets"*

These tweets are rare examples that reflect the spill-over of the print media's framing of reality: that bikesharing is dangerous. The struggle over meaning is relatively clear cut on the health and safety issue: on Twitter, the meaning of safety in bikesharing is based on scientific research and health gains are emphasized, while the print media focuses on anecdotal incidences to assert meaning of danger.

Moral evaluations were employed in both mediums to legitimize support for bikeshare. In these instances, the promotion of bikeshare was positively portrayed because it led to more safety and more health, desirable outcomes. In newspapers, authorization through personal authority was also used to underline the moral evaluation, as in the following excerpt, where a mayor connects the implementation of bikesharing with improved safety for active transport.

- ND97: "Implementing bike share is a big step towards Tampa becoming the city we want to be - a city where it is not only safe, but encouraged for people to walk and bike, said Tampa mayor Bob Buckhorn in a launch announcement."

The notion of "becoming the city we want to be" is moral positioning and the establishment of what is 'good.' While safety is a laudable goal, the mayor also sets qualifications on the safe situation envisioned, one where the community is not only in automobiles, but also cycling and walking. Bikesharing is also instrumentalized as a way to achieve better health, a goal with a positive moral evaluation. Thus the coupling of authorization and instrumental rationalizations was also to be found in the print media corpus when the authorization through status was not personalized but attributed to governmental departments.

- ND138: *"The city health department wanted poorer North Minneapolis to have access to the bikes as well to encourage exercise."*

The agency bestowed here on the city health department endows it with personal attributes, namely the ability to 'want'. This helps to establish the legitimacy of the goal 'expressed' by the city health department, creating distance but also making it more difficult to challenge as it is an authority as an entire department that establishes the goal. Individuals are more easily challenged, because both the address of the criticism is clear, and the fallibility of individual judgement is less broadly supported than the consensus of an official department that, as is evident by its title, seeks to ensure a consensual social good (health).

Identity is used on both mediums for building consensual support for bikesharing. In the print media content, journalists and editors have more space to achieve this, and thus it is done thoroughly. In the following excerpt, othering is employed to make it easier for readers to identify themselves with the group of supporters of bikeshare. 'Transit gurus' and 'health buffs' are terms that relatively few people would self-identify with, however, when applied to the topic of bikesharing, they cover important bases as experts on two of the relevant frames used to legitimize the practice of bikesharing. Transit gurus have expertise on transit, which is a quintessential goal of bikesharing programs, and health buffs will aptly be able to evaluate what activities will contribute to health and healthy lifestyles; in both cases they serve as experts and enable authorization through access to special knowledge. For the rest of us, the "occasional rider who wants to explore a park on a lovely day," we can rely on the expert opinions of the two aforementioned groups, while easily identifying ourselves as beneficiaries of following their advice.

- ND46: *"This looks like a major victory for everyone -- transit gurus who want to see fewer cars on the streets, health buffs who need a daily workout, and even the occasional rider who wants to explore a park on a lovely day. "*

Even if it is something we do not regularly do, it is easy to understand the desire of exploring a park on a lovely day – and it is difficult to find a fault with this suggestion. While it has become consensus that fewer cars on the streets and daily workouts are evaluated positively, the above formulation allows us to rationalize support for bikesharing as an instrument to achieve those things, even if we don't directly participate, continue driving cars and not working out. The readers may thus not be vehement supporters of bikesharing, but will also not me motivated to actively oppose it.

On Twitter, this type of rationalization also shapes the discourse, while the appeals can be more directly personal. Maybe you did not make the following New Year's resolution as suggested in the tweet, but it is difficult to take the opposite position and want to be less healthy, active and sustainable. Thus, the moral evaluation of these as good, and connecting them to bikesharing helps to legitimize that practice.

- NT10798: *"Did you make a New Year's resolution to be more healthy and active? More sustainable? #Bikeshare is the answer! http://t.co/KH7LTdcPkO"*

Again here we see bikesharing being attached to two ideas that have positive meanings, backed up by broad consensus. Connecting it to 'health' and 'activeness' makes the meaning of bikesharing more positive and acceptable.

Taking it a step further, associating bikesharing with health and fitness makes it 'good,' and even if one has opposed bikesharing, the author acknowledging that they also were not always active supporters of the idea decreases the barriers for skeptics to agree to supporting bikesharing. The following tweet shows that this is acceptable behavior.

- NT3809: *"Wasn't initially a fan of bikeshare but have grown to love them for business travel. Beats the fitness room! http://t.co/Em2Vn9jGsY"*

Legitimizing bikesharing as a social practice was often and easily integrated with issues of health and safety. Only in the print media was mythopoesis extensively used to delegitimize the practice, although this was usually construed as a part of the helmet debate. Twitter much more commonly saw individuals legitimizing approval for bikesharing by referring to related aspects of outcomes from bikesharing that they liked or through the recounting of personal stories connected with bikesharing.

10.2.2.3.   Legitimation of Mobility through the Environment

When it comes to the environment as an issue, the print media corpus yielded almost exclusively examples of bikesharing being legitimized through instrumental rationalization as a means to achieve separate, more highly prioritized environmental goals. (It is worth noting that rationalizing bikesharing to achieve environmental ends is prominent in the case culture where the consensus regarding climate change is the weakest.)

Early on in the study period, the United States government's Environmental Protection Agency (EPA) put out a press release distributed on by a major news service, inviting communities to apply for technical assistance. Technical assistance in bikeshare planning was one form of assistance offered in the program, which "aims to increase resilience to natural disasters and strengthen the economy while protecting human health and the environment." (ND32) While at that point there was no mention of the statement of call in newspapers or the Twitter corpus, much later a local newspaper reported that the city had acquired the technical assistance.

- ND316: *"The city on Tuesday received notice it was among four cities selected nationally by the U.S. Department of Environmental Protection to receive technical assistance in planning a bike share program."*

Here, bikesharing is portrayed as a means to achieving the ends of environmental protection. This rationalization is similarly found on Twitter, where there are tweets referring to the technical bikeshare assistance offered by the EPA. The first tweet is authored by a regional Twitter account of the EPA, the second is from a Twitter account which compiles information about transport jobs, and the third is a retweet of a previous tweet from private individuals. All have in common the rationalization: citing the source or reason for bikesharing as the EPA indicates that environmental goals are the main outcomes.

- NT14049: *"Baton Rouge is moving on sustainability with a #bikeshare program through @EPASmartGrowth. http://t.co/jmyf8rvtHW http://t.co/SbRS3EMIER"*
- NT14658: *"#batonrouge receives #EPA grant to plan bikeshare program. http://t.co/OPgOO6EVre #cycling"*
- NT115568: *"RT @matt_weiser: RT @tatecurtis: Bikeshare coming to #Fresno through EPA: http://t.co/Mg27Vhhvbo #bikes #smog #eco"*

The way bikesharing is handled in the case of the EPA's technical assistance call is representative of the way bikesharing is legitimized by through instrumental rationalization as a tool for achieving environmental goals. This is the case when newspapers cover bikesharing programs as transit as well:

- ND33: *""Bike sharing proves to be one of the more sustainable forms of public transit, and sustainability is our focus," Scott Murphy, president of Bike Miami Valley, a volunteer cycling advocacy group."*

Here, the issue at hand is predominantly transport, however sustainability is described as the focus, rather than transport goals. That the journalist selected that particular quote is typical of the way environmental goals are used to rationalize the decision to pursue bikesharing also in other cases. Also where the focus actually is on transport, the main rationalization for doing bikesharing is being environmentally friendly, not providing a good transport service. Thereby the idea is tacitly suggested that bikesharing is a suboptimal mobility option, sacrificing top-notch transport for being environmentally friendly.

- ND163: *"The University's Bike Share Program began in 2010 as part of the 40th anniversary of Earth Day. Its purpose is to promote a culture shift toward increased reliance on non-carbon modes of transportation among the University's community."*
- ND114: *"In Chile and elsewhere in Latin America, the spread of designated cycling lanes, storage racks and bike share programs are encouraging commuters to switch from cars to bikes, which are cheaper and environmentally friendly."*

In the Twitter corpus, similar legitimations were to be found. This Twitter emphasizes that it was a positive thing to *see* the bikeshare program, but does not comment on *using* it:

- NT7778: "It was fantastic to see the #Chicago #bikeshare. #bikes #climateleadership http://t.co/1ejhIRNReN"

While remaining in this line of instrumental rationalization of bikeshare to achieve environmental goals, there are some tweets, like the following two that more vehemently celebrate bikeshare's contribution to environmental goals. Nonetheless, bikesharing's suitability as a transport tool is not emphasized.

- NT1287: *"Go #bikedc! RT @washingtonian Capital @Bikeshare reduced Washington's carbon dioxide output by 2.93 million pounds http://t.co/LE1d5d3IXU"*
- NT1824: *"Now we have scientific proof that bikeshare makes your city cleaner http://t.co/nIneaC9vCI"*

Twitter and the print media are relatively unanimous interpreting the meaning of bikesharing as something positive for the climate.

10.2.2.4. Community-Building and Social Justice as a Legitimizing Factor

When social justice, social equality, and community-building are associated with bikesharing legitimation moral evaluations come more strongly into the discourse. The moral evaluation, however, is seldom applied to bikesharing itself, but more often to other outcomes which then rationalize bikesharing as a tool for arriving at them.

- NT6247: *"Incredibly, 1€ for Vienna's #bikeshare system netted me a lifetime membership! That's transportation equity all. http://t.co/daE7SfpoDD"*

Here, the provision of mobility through bikesharing is subjected to moral evaluation not because of the mobility option itself, but because of the low economic barriers. The tacit suggestion is that one Euro does not exclude particular groups. Economism is again at play here, as barriers that are not financial are not considered. Much more attention is given on Twitter to the consideration of access to bikeshare for all social groups than in the print media corpus. The following tweets offer a negative moral evaluation of bikesharing because of unequal social and economic access to bikesharing as a part of a mobility service.

- NT3357: *"Why don't the poor use bikeshare systems? http://t.co/Kf4Q4Jvlov @SLCBikeShare @DowntownSLC"*
- NT3502: *"Important #bikeshare analysis shows that programs cater to the rich. @mattyglesias explains why http://t.co/EGSY2KVRnw via @voxdotcom"*
- NT2291: *"#BikeShare still struggles to reach the poor: http://t.co/qKcGRXJWE3 @e_jaffe Have you seen report v @Living_Cities? http://t.co/n9V1vYon9A"*

The above tweets are found rather early on in the timeframe of the study. Following the links to the blogs and other online and informal media that are commonly linked in those tweets shows that one barrier to accessing bikesharing for the poor was cited as the requirement of a credit card, which many poor individuals did not have or have access to, but without which, access to bikesharing was not possible. Moving along the timeline of the study, the following tweets celebrate the removal of this barrier in one major bikeshare program.

- NT12481: "Terrific advance: unbanked residents of Arlington can now join Capitol Bikeshare, pay w cash http://t.co/4zVMg2zlvv"

- NT16199: "A huge step for equity: @ArlingtonVAWeb to begin offering cash-only @bikeshare memberships for the unbanked! #CaBi http://t.co/ztIt1As3od"

The legitimation here is through a moral evaluation of bikesharing: that it is good, and that therefore it is unjust if poorer members of society cannot access it. This meaning is rarely related in the print media corpus. In this rare example from the print media corpus, the problem is acknowledged. The legitimation of bikesharing is authorized through the city health department 'wanting' to provide people with access to bikeshare lends it legitimation, but in the legitimation is also combined with instrumentalization for achieving better health. Bikesharing is evaluated negatively only in that it is a problem that the poor cannot access it.

- ND138: "The city of Minneapolis partnered with a nonprofit to begin a free bike-sharing program in 2010 with kiosks in downtown and affluent south Minneapolis. The city health department wanted poorer North Minneapolis to have access to the bikes as well to encourage exercise, but discovered a stumbling block. Although free, members had to register with a credit card, which poor people often don't possess. City officials and the nonprofit are trying to figure out an alternative system."

The moral evaluation of bikesharing, which tainted bikesharing's reputation in the Twitter content was not reflected very much in the print media content. Nonetheless, the idea of bikesharing as an unjust transport solution was not restricted to Twitter. The quote below comes from a press release from the EPA acknowledges the problem of unjust access to bikeshare. Legitimation for enabling access to poorer social segments is derived from the EPA as an authority. If the authority deems bikesharing desirable and adopts the normative approach that also the poor should have access, then this is an evaluation of bikesharing as positive.

- ND32: *"In 2013 in Denver, Colo., EPA worked with the local community, stakeholder groups, and the city to help develop a plan to expand the existing bikeshare program to serve lower income neighborhoods around the Denver metro region."*

A newspaper article covering a mayoral debate in the city of Philadelphia indicated that the issue had gotten through to the mayoral candidates. They formulated their critique with a human-interest frame based on a moral evaluation much in the same way that many twitterers did. Bikesharing was criticized, but the criticism was nuanced.

- ND394: *"That concern for the have-nots also influenced the positions of Goodman and Williams when it came to the discussion of bike lanes and bike-sharing programs. While the other candidates spoke largely of wanting to expand the number of bike lanes, Goodman and Williams expressed concern that the coming bike-share program would prove too expensive for the city's poorest residents, who might be the most in need of such transportation."*

The Philadelphia newspaper formulated it in such a way that allowed for the benefits of bikesharing as mobility to come through, while focusing the candidates' criticism specifically on the cost of accessing bikesharing.

The issue of social justice and bikesharing was a topic for other mayors as well. In Chicago, the mayor legitimized bikesharing as a social practice but separately from its contribution to mobility. A twitterer, but no newspapers picked up on this and portrayed it thusly:

- NT2033: *"#Chicago #Bikeshare at @MayorEmanuel urging had 900 youth (many at-risk) working for @DivvyBikes summer jobs #Nacto14"*

In the presentation of the tweet, the mayor instrumentalizes the bikeshare program as a helpful tool for providing work to young and possibly marginalized segments of society. Bikesharing is used as an ends to achieve the employment of youth. On Twitter, there is evidence of dialogue on the issue of access to bikeshare. In both of these cases, which are responses to critique of bikeshare that it mainly serves the rich, bikeshare is portrayed as a mobility tool which provides social justice. The responses both acknowledge the problem, but are optimistic that bikeshare itself is not the problem, and it is even legitimized through instrumentalization as a solution for the broader problem of which it is accused of being a part:

- NT1621: *"@BustinJurkz Yes, unfortunately. There is still a lot of work to be done to eradicate poverty. We want #bikeshare to be a tool for everyone."*
- NT1896: *"@seattlepi would be interesting to see who uses #bikeshare. Are communities of color using? mobility is social justice..."*

The above examples are evidence that the meaning of bikesharing has come to be that of an exclusive service for wealthy communities. The struggle here is to assert the meaning of inclusive transport provision. Back in the print media, direct moral evaluation of bikesharing for community improvement is to be found. A report from a Toronto newspaper on hope amongst dilapidated communities in Detroit approvingly interprets the effects a company has had on the downtown community:

- ND193: *"there can be no denying the improvements Quicken's presence has wrought in downtown Detroit, from the activities in Campus Martius Park - with its skating rink in winter and beach in the summer - to the bike-sharing and outdoor work tables in the street, to the buzz in restaurants and bars."*

Here, the meaning of bikesharing is described as an element of things providing evidence of improvement, a positive evaluation. If bikesharing is evidence of good, it can also be assumed to be good. This excerpt is embedded in an article emphasizing the signs of 'hope' there where it is otherwise assumed that there is a shortage of that. A tacit assumption of the article, is that the community improvement hinges on an economic upswing, through which the improvement is enabled.

10.2.2.5.   Summary: Legitimation in the North American Case

Personal and rational authorization are common forms of legitimation on both mediums. On Twitter, the author's individual experience when related to health and safety are more acceptable than in the print media corpus. Personalized stories as mythopoesis for legitimation of support or skepticism of bikesharing are to be found on both mediums, but while on Twitter they are much less common and often banal, those occurring in the print media tend to ride on some degree of sensationalism. This reflects the values of media logic and fits in to the "important criteria of journalistic story-telling and appearances" (Esmark & Mayerhöffer 2014:230), criteria to which the Twitter content need not adhere.

On Twitter, bikesharing is rationalized with considerations of health and activity. Twitterers laud the benefits of bikeshare as an improvement in their access to a healthy way of life. In the print media, when the health and safety frame is employed, bikesharing is more commonly portrayed as dangerous. This harkens back to the cultural meaning of the bicycle in North America: a children's toy, bikeshare is not grown up, nor a proper practice for adults. Using bikeshare for mobility and thus cycling on the road is thus tacitly portrayed as 'playing in traffic.' Those who play in traffic experience negative consequences, as various examples of mythopoesis in the form of cautionary tales show in the print media.

Bikesharing is often perceived as a means to an ends in the North American print media, while on Twitter it is also portrayed as a goal in and of itself. In the print media content, it is shown as hindering (when done wrong) or contributing to social justice (when done right), it is a means to achieve better health, it is a means to reduce pollution, and it can enable better communities. While it is in its quintessence a mobility project, the legitimation of bikesharing as a superior option for mobility is outshined by its portrayal as an option to provide (better or worse) mobility while delivering in other areas. Therefore, the

legitimation of bikesharing is often carried out by presenting bikesharing as a tool to achieve other goals, be they sustainability or environmental or social justice and community building goals. On Twitter, though not exclusively, bikesharing is also projected as an ends in its own right. Thus, the print media in the North American case is a significant departure from the German case, for example, where bikesharing's credentials as a transport or transit tool are put to the forefront.

In this way in the North American case, legitimation for bikesharing is more often drawn from other considerations. When economic considerations come into play, however, other considerations are subordinated. Thus, even though the quantitative content analysis showed the mobility frame as being the strongest in terms of the highest frequency, the economic frame nonetheless carries more weight and dominates other considerations. This finding supports the notion that loudness (i.e., frequent repetition of a frame) will not be able to compete with the strength of a frame (Chong & Druckman 2007b). Economic considerations, then it would be assumed based on the present analysis that especially print media producers in the North American case perceive economic considerations to be more available, accessible, and applicable than mobility considerations when building frames. After all, when linked to the broader cultural context, economic questions are the realm of adults with serious implications, while bikesharing is akin to a children's pastime. Thus the funding of bikeshare is taken more seriously than bikesharing and its mobility implications.

This goes in line then with the finding that rationalizations were the most commonly used form of legitimation in the North American discourse. This may be due to the fact that city cycling as a whole is a larger departure from the status quo in the North American case than in the other two cases, especially the German case. Bikesharing in the North American case thus must be rationalized along numerous vectors, it represents a challenge to the normal type of transportation. The goal in the North American case is not only legitimizing bikesharing as an acceptable practice compared with other forms of transport, but in legitimizing it as an acceptable and worthy practice at all. The role of culture shines through at this point, where cycling has the image of a children's pastime. Children's hobbies are not easily taken seriously as replacements or even supplements for important social needs such as mobility. The legitimation of bikesharing as achieving more than just mobility provision may be a reaction to the perceived challenge of suggesting a children's toy do satisfy adult society's needs.

10.2.3. The Spanish Case

10.2.3.1. Mobility Issues and Authorization

Authorization is one of the more common methods of legitimizing bikesharing as a practice in the Spanish corpus. Often, the authorization is through personal status; the titles of the individuals quoted in the newspapers in the Spanish corpus are almost always official titles of their status as public or elected officials. The following example goes yet further, compounding both personal and impersonal authorization:

- SD5: "*La elección de estos puntos no ha sido al azar. Tal como apunta Luis Fernández Huerga, concejal de Movilidad y de Servicios Urbanos, «desde principios de año hemos establecido contactos con ciclistas individuales y con colectivos para fijar cuáles eran los lugares donde podían tener más demanda». En particular, se ha pretendido que «complementen al servicios de alquiler de bicicletas públicas, para que sus usuarios tengan dónde aparcarlas sin necesidad de devolverlas».*" [The choice of these points has not been random. As noted by Luis Fernández Huerga, Councilor for Mobility and Urban Services, "since the beginning of the year we have established contacts with individual cyclists and groups to determine where they could have more demand." In particular, it has been intended to "complement public bicycle rental services so that its users have somewhere to park them without having to return them.]

The above example emphasizes the function of authorization in that first the speaker, the (claim maker) is identified with his title 'Councilor for Mobility and Urban Services,' already lending authority through his role. He then goes on in his quote to legitimize the actions by appealing to normative authority: he and his organization has established contact with the people whom they serve, to again seek their input and approval in deciding what are the best places for interventions. Thereby, he establishes the participative and transparent (if not also democratic) nature of the process he is describing. In the following example, the journalist compounds legitimation. The head of industry, himself an authority through his status, is quoted with an appeal to common practice.

- SD174: "*«Desde 2011, el uso de la bicicleta se ha incrementado un 50 por ciento», destacó el responsable del ramo, Diego Sanjuanbenito.*" [Since 2011, the use of bicycle has increased by 50 percent," said the head of the industry, Diego Sanjuanbenito.]

Authorization is also regularly granted through personal authority or status. Legitimation in this format is common in the print media corpus. In some instances, this form of authorization is used alone to legitimize, as in the first example below.

- SD89: "*El propio alcalde, Xavier Trias, se ha pronunciado en varias ocasiones en el sentido de que el futuro de la movilidad de la capital catalana va asociado a la bici con baterías.*" [The mayor himself, Xavier Trias, has on various occasions spoken about the future of mobility in the Catalan capital, associating it with the battery assisted bicycle."]

This type of authorization is also to be found on Twitter, especially in the form of pre-fabricated tweets from news sites. We can observe common legitimation practices between the two mediums very often because the content is coming directly from the news media producers onto Twitter, regularly using headlines of articles as the tweet itself with a link to that article. The following are examples of tweets that were tweeted by news sites.

- ST285: "*l Ayuntamiento denuncia los actos vandálicos que destrozan las bicicletas públicas - http://t.co/Ta6NBDIUbG*" [The City Council denounces the vandalism that destroys public bicycles]
- ST792: "*BENIDORM AL DIA: El PP exige responsabilidades al gobierno de Navarro por el servicio de las bicicletas públicas... http://t.co/ShZGEomVKG*" [BENIDORM TODAY: The Popular Party demands that the government of Navarro be responsible for the service of the public bicycles…]

Not only appeals to personal authority are used in legitimizing the practice of bikesharing, normative authorization through appeal to common practice also serve as authorization. In the following print media excerpt, the broader profile in age and gender of bicycle usership for bikesharing as opposed to cycling before Madrid's bikeshare serves as a legitimizing factor.

- SD 149: "*El pedaleante cotidiano madrileño era un hombre de entre 30 y 40 años. El usuario mayoritario de BiciMad tiene entre 26 y 45 años (70%) y no hay diferencias notables entre hombres y mujeres*." [Your everyday madrileño cyclist was a man between the age of 30 and 40. The majority of users of BiciMad (70% of them) are between 26 and 45 years with no notable difference between men and women.]

This type of appeal to common practice is not found in the Twitter content. Access to bikesharing for children is mentioned, but is not construed as a legitimizing factor as the broadened access to cycling is in the print media.

- ST11358: "*En París incluso hay bicis públicas para niños! #ciudadesenbicicleta http://t.co/SkG9e9RQwG*" [In Paris there are even public bicycles for children! #citiesbybicycle]

There are, however, challenges to the basic appeal to normative authorizations found in the Twitter corpus. This tweet refers to the discussion in the North American case about equal access to bikesharing, and implicitly criticizes its exclusivity.

- ST1317: "*Las bicis públicas es cosa de ricos en EEUU.Blancos e hispanos, los más proclives a pedalearhttp://t.co/D6XzIprzxJVía @OlivierRazemon*" [Public bikes are things for the rich in the USA, whites and Hispanics are the most likely to pedal]

Normative authorization is also used to legitimize bikesharing by sheer numbers, regardless of what the profile is. Here, we see that common practice is cited as a ruling on the legitimacy of the practice.

- SD162: "*Aunque los datos fluctúan en función de la estación del año, la estimación media es que cada día 250 usuarios se mueven por la ciudad con las bicis públicas.*" [Although the data fluctuate according to season, the average estimate is that 250 users move around the city with public bikes every day.]

Though in other cases statistics on usership are also used in the Twitter content to legitimize bikesharing through normative authorization, this is not found in the Spanish Twitter corpus. Back in the print media corpus, common practice does not necessarily have to mean the practice of bikeshare use to legitimize bikesharing through normative authorization. The following example shows that widespread 'knowledge of' bikesharing already serves to legitimize. This is paired with a moral evaluation, a large majority of survey respondents also have a positive view of the public bicycle systems that they have knowledge of.

- SD54: "*La gran mayoría de las personas encuestadas es partidaria de adecuar espacios reservados para las bicicletas en el transporte público, cerca del 85% de los catalanes conoce algún sistema de bicicleta pública y casi todos hacen una valoración positiva.*" [The vast majority of people surveyed are in favor of adapting reserved spaces for bicycles on public transport, and about 85% of Catalans know of a public bicycle system and almost all make a positive assessment.]

Perhaps because bikesharing is a policy choice opted for by authorities, there is very little personal or status authorization used to legitimize opposition to bikesharing. Although bikesharing is overwhelmingly presented positively and the practice legitimized in the print media corpus, there are also examples of legitimation of opposition to bikesharing. To these ends, normative authorization can also be employed.

Below is an example of normative authorization for legitimizing opposition to bikesharing due to an increase of complaints of an 'invasion of cyclists' before bikesharing has been implemented. The use of the term 'invasion' in this example is also a moral evaluation through comparison, cyclists as invaders. This serves to establish the meaning of bikesharing as something foreign and unwelcome, and a consequence of something over which the citizens have no say.

- SD36: "Cada vez hay más bicicletas por la ciudad y su número se verá multiplicado en el primer trimestre del próximo año cuando se ponga en funcionamiento el sistema de bancadas con 600 bicicletas públicas en alquiler. A la vez, lo que también va en aumento, son las quejas de los vecinos de Murcia por la invasión de ciclistas en aceras y zonas peatonales." [There are more and more bicycles around the city, and their number will be multiplied in the first quarter of next year when the system of stationary docks is put into operation with 600 public bicycles for rent. At the same time, also increasing are the complaints of residents of Murcia by the invasion of cyclists on sidewalks and pedestrian zones.]

In the Twitter corpus, there are no occurrences of personal authorization being used to legitimize opposition to bikesharing. The negative evaluations of bikesharing are legitimized through different means.

10.2.3.2. Bikesharing as Mobility: Critique through Rationalization on Twitter

The negative evaluations of bikesharing found on Twitter legitimize opposition not to bikesharing in general, but to poorly implemented bikesharing. These tweets are often an expression of frustration or disappointment that bikesharing does not live up to its promise to provide mobility. This dismay is most often legitimized through rationalization; because the ends of bikesharing (often the ends are perceived to be mobility provision) are not met, bikesharing is evaluated negatively.

- ST3097: *"@enbicipormadrid bicis públicas de pena, escasez de carril bici, dejadez del ayuntamiento... nunca os ponéis de parte del usuario. Nunca*" [@enbicipormadrid tough public bikes, shortage of bike lanes, negligence of the city council ... you never put yourselves in the role of the user. Never]
- ST6790: "*Estación de bicis publicas de Las Condes cerca de nada... (Sanchez Fontecilla con Vaticano) http://t.co/QFjLfdYRyj"* [Public bike station Las Condes close to nothing (intersection of Sanchez Fontecilla with Vaticano]

- ST600: "*Viva #Malaga y sus bicicletas públicas. Todas NO DISPONIBLES. Y todos los dias igual @pacodelatorrep @malaga http://t.co/Kn11dEeiXc*" [Hurray for #Malaga and its public bicicles. All are NOT AVIALABLE. And every day it's the same]

This phenomena is not restricted to critique of bikesharing geographically within the case culture. Here, a critiques of the state of New York City's bikeshare and Paris' bikeshare are made. Individuals form the Spanish cultural context encounter and comment on foreign bikeshare programs that they encounter virtually via the internet (as in the first example below), or first-hand, when they travel elsewhere (as in the second example below). This critique is likely a result of exposure and expectations of bikesharing they have built up through experiences with bikesharing at home. (This is another example of the outward orientation that is also present on Twitter.)

- ST3333: *"#Bicicletas publicas de NYC: sucias y en mal estado http://t.co/ixumOpfhcb #bicipublica"* [Public #bicycles of NYC: dirty and in bad condition, #publicbikes]
- ST1755: "El problema de las bicis públicas. La mitad de las bases sin bicis (azul) y la otra mitad sin huecos (rojo). París." [The problem of public bikes: Half the docks are empty (blue) and the other half are out of order (red). Paris.]

10.2.3.3. Environmental Frame

Bikesharing was associated with environmental issues in the print media context much more than in the Twitter corpus. The legitimation in the print media context was almost always one of rationalization as well; specifically, bikesharing was used in an instrumental rationalization as a means to achieve environmental goals. This fit in to the explanatory rationalization and the common citation of personal authority or status – those who delivered statements that journalists and editors included in print media portrayal of bikesharing often instrumentalized bikesharing as a means of achieving environmental ends. In this first excerpt, instrumental rationalization is used: bikesharing helps along the way to alleviate the concentration of emissions producers.

- SD8: "*Concretamente, la idea es que cubra toda el área de bajas emisiones -el «cogollo» de la ciudad, donde se concentra la contaminación procedente de los coches-, y llegue, a comienzos de 2015, a la altura de la plaza de Cuzco.*" [Specifically, the idea is to cover the entire area of low

emissions – beginning from the "head" of the city, where pollution from cars is concentrated, and arrive, at the beginning of 2015, at the parralell of the square of Cuzco.]

Again in the following, the director of Conservation at the Foundation for Ecology and Development (eCodes) is selected for citation with a quote instrumentalizing bikeshare for environmental ends. Beyond the quote, the rationalization is that being a Green Capital is a worthy goal (tacit moral evaluation), and busses, trams, metros, an bikeshare is a way to achieve it.

- SD115: "*En España el mejor ejemplo de ciudad verde quizás sea Vitoria, reconocida como European Green Capital en 2012. "No solo tiene un cinturón verde y un centro peatonal. Existe un transporte público de calidad: autobuses, tranvías, metros y bicis públicas de alquiler que están siendo bastante exitosas""*") [In Spain the best example of a green city is perhaps Vitoria, recognized as European Green Capital in 2012. "Not only has a green belt and a pedestrian center. There is a quality public transport: buses, trams, metros and public rental bikes that have been quite successful."]

Here, we have a personal authority legitimizing bikesharing for environmental goals; the environment minister explains how bikesharing is part of reducing environmental impact while maintaining living standards. The explicit reference to the transition in perception of the bicycle as sports or exercise equipment but also as a tool for mobility demonstrates the strong influence of the Spanish cultural perception of the bicycle as sport.

- SD166: "*"La bicicleta es parte de la solución integral que nos va a permitir tener mejor calidad de vida. Es un medio de transporte que se puede utilizar desde ahora habitualmente, no solo para hacer ejercicio, sino para movilizarnos a nuestros puntos de trabajo , a nuestras residencias y desde la perspectiva ambiental, es una gran colaboración en poder disminuir las concentraciones de contaminantes que hay en la región metropolitana", destacó Pablo Badenier, ministro de Medio Ambiente.*" [""The bicycle is part of the integral solution that will allow us to have a better quality of life. It is a means of transport that can be used regularly as of now, not only to exercise, but as transport to our places of work, our residences and from the environmental perspective, is a great collaboration in reducing the concentrations of pollutants in the metropolitan region," said Environment Minister Pablo Badenier."]

Thus, in these legitimations, which are virtually absent in Twitter, the meaning of bikesharing is that of a step which needs to be taken to achieve another goal. This meaning of bikesharing as a stepping stone

toward environmental protection or sustainability is enabled by the consensual meaning of climate change and the need to address it. It is neither supported nor challenged on Twitter, and may enable policymakers to pursue bikesharing with little or no opposition.

10.2.3.4. Economic Frame

When framed in economic terms, the legitimation of bikesharing in print media is often legitimized through the status of the people responsible for the decision to implement bikesharing. Decisions against bikesharing are non-existent in the print media corpus, presumably because they then don't require any allocation of resources. Further, decisions not to change the way things are fit less into the criteria of newsworthiness. However, in the Twitter corpus, there are similarly no instances of demanding or requesting bikeshare where it isn't.

In the following example, the journalist uses indirect speech to bring in a statement of the Director of Transport from the Barcelona municipal services (Deulofeu). Because of Mr. Deulofeu's position, which is cited earlier on in the article, the legitimation is on of personal authorization. Products made in the region are evaluated as positive, even if they are more expensive than what was formerly used; but these bicycles are being explained to be much better, as they are electric. This and the local production rationalized away the extra cost. After justifying the costs and production, the bikeshare is arraigned for its purpose, mobility.

SD89: "*Deulofeu cantó las excelencias del nuevo vehículo y subrayó que la decena de empresas que han desarrollado el prototipo son todas catalanas. El coste de cada unidad es entre tres y cuatro veces superior al modelo actual, algo más de 1.000 euros por unidad. La inversión total estimada alcanza los cinco millones de euros. El Bicing eléctrico permitirá que el ciclista tenga una autonomía de unos 30 o 40 kilómetros, calculó el mismo responsable.*" [Deulofeu spoke positively of the new vehicle and stressed that the ten companies that have developed the prototype are all Catalan. The cost of each unit is between three and four times higher than the current model, just over 1,000 euros per unit. The estimated total investment amounts to five million euros. The electric bicing will allow the cyclist to have a range of about 30 or 40 kilometers, he said.]

This is type of explanation and legitimation of decisions and their details is common in the Spanish print media. The legitimation for political decisions about bikesharing is explained and the legitimations can be lengthy. On Twitter, news organizations similarly provided information on the costs of bikesharing

programs. In some cases it was done to seem very objective, making a statement without explicit legitimation.

- ST1360: *"RT @papelysignos: En Madrid, España: 4,2 millones de euros para ampliar BiciMAD bicicletas públicas. Vía @horapuntanews #HoraPuntaNewshttp…"* [In Madrid, Spain: 4.2 million euros to expand BiciMAD public bicycles. Via @horapuntanews #HoraPuntaNews]

The thorough legitimation of allocation of public funds for bikesharing in the print media may be a reaction to some of the sentiment about it. While the opposition to this was not hugely visible in the Spanish text corpus, some Twitter posts show that there is a certain demand for legitimation of public expenditures for bikesharing, as in the following example.

- ST6042: *"@marquesriparia @fr_carrillo El sistema de bicis públicas de BCN cuesta unos 11-12M€ anuales, y es solo una de las ramas del plan de bici"* [The system of public bikes of BCN costs some 11-12M€ annualy, and that is just a part of the bicycle plan]

Between all the Legitimation for the expenditure of public resources on bikesharing projects, the question arose in the Twitter corpus about whether bikesharing should be financially self-sufficient. This is not a legitimation per se, but opens the door to the questioning of legitimations.

ST10162: *"Nueva Entrada: ¿Deberían ser los sistemas de bicicletas públicas financieramente sostenibles? http://t.co/2BzChQw1Ol #ciudad #sostenible"* [New Entry: Do public bicycle systems need to be financially sustainable?]

10.2.3.5. Summary: Legitimation in the Spanish Case

The Spanish print media corpus is full of authorization as a main legitimation tool. Individuals are quoted either directly or using indirect speech, and their positions, usually as a public official, serve give their statements legitimacy. That which is being legitimized, however, is more often than not already decided or already implemented. There is little suggestion to open a discussion on bikesharing and the associated issues, but rather, the print media serves to mediate the explanations of why certain measures have been taken and why they are legitimate.

There is a quite clear pairing of legitimation tactics with frames in the print media corpus. Economic and mobility arguments are legitimated through personal authorization in most cases, while environmental

considerations are connected to bikesharing when instrumental rationalizations are used. In numerous cases, the instrumental rationalizations with environmental considerations are embedded in personal authorizations, with individuals with status being given the responsibility for those issue associations, rather than the news source. In the Twitter content, such pairings are less apparent. This indicates that meaning is asserted by elites who are also sources for mass media.

The main criticism from Twitter is not of the bikeshare policies themselves, but rather that these should live up to promises and expectations, in other words, they should work well. The Twitter content shows that bikesharing as a whole is not called into question very much, but certain aspects of bikesharing are opposed and legitimized through instrumental rationalization. This is the only major form of legitimation of a negative evaluation of bikesharing which is apparent. The questioning of legitimation for the allocation of public resources does not go so far as to legitimize opposition to bikeshare, but merely brings up the question.

The focus of the print media is European, focused mostly on legitimation of domestic bikeshare-related politics through authorization. It also occurs, albeit less often, that bikesharing is also legitimized through a mythopoesis through looking at neighboring countries as well. In this sense, the Twitter discussion is much more permeable with examples and input from Latin America (and to a lesser extent, other regions as well).

In the Spanish case, the discussions on both Twitter and in the print media were all focused on bikeshare programs that existed at the time of text creation. This was one significant difference to the discussions in the North American case, where potential and planned bikeshare programs were also the subject of discussion. In the German case there was some talk of planned programs or desired programs, but also talk of lack of bikesharing. (In the case of the latter, the lack was a topic exclusively triggered by the survey results of the German bicycle lobby.)

10.2.4. Legitimation across Cases and Mediums

The analysis of legitimation tactics offers insight into how print media and Twitter texts serve to maintain or challenge the realities which are used as the basis for legitimizing policy through discourse. On a very broad level, it was observed that the ways in which discourse was produced varied between mediums and between cultures.

According to Wolfsfeld's (2011) outline of steps toward influencing politics, traditional media remains more effective in terms of influencing politics than social media. This is corroborated by numerous other

sources (Kwak *et al.* 2010; Chadwick 2013; Pew Research Center 2013; Fuchs 2014a). Assuming this, a result of this analysis is that the actors involved in print media production are able to assert the reality that economic considerations are more important than others. Thus, the learning from the discourse analytical approach can relativize the results of the quantitative analysis, in which was shown that the mobility frame was the loudest. The discourse analysis revealed that in the German and North American print media, other frames were subordinate to economic considerations. Although to a lesser degree, the Spanish case also showed this hierarchy. This means that the loudness of a frame alone does not determine its dominance, a finding that is in line with previous theories on frame competition (Chong & Druckman 2007a, 2007b).

While this research has no basis to sketch the role of the different frames or mediums in opinion formation processes, it can be used to suggest that the producers of the print media texts put economic considerations before other considerations, and contributed to the creation of this reality through the expression of this belief. In this way, the print media complex applies economism to assert the reality that economic considerations are more important to the discussion than other considerations. This was observed in the way that lists of impacts were made, with economic considerations usually being listed first, as well as the environmental and community cohesion impacts that could be enjoyed where bikesharing can be paid for. The way in which economic questions are answered as regards bikesharing become the central considerations which must be satisfied in discussing the issue, only after which issues such as the provision of mobility, health benefits or safety dangers, and questions of social justice or the environment become relevant.

The valorization of economic considerations was observed in the Twitter content as well, but to a lesser extent. What should be noted at this point is that economic considerations in the discourses analyzed had more potency to legitimize positions on the issue of bikesharing. That this was stronger in the print media is likely because of the print media's experience that the economic frame is a stronger frame in a competitive framing environment than the other frames involved (Chong & Druckman 2007b, 2007a). That the hierarchy with the economic frame at the top was somewhat less apparent in the Twitter content is in part attributable to the fact that while bikesharing itself is an obtrusive issue, the economic considerations (aside from the personalized costs of using a bikesharing) related to bikesharing are non-obtrusive (Zucker 1978).

10.2.4.1. Legitimation Practices in Two Public Sphere Arenas: Twitter and Print Media

As regards the mediums, the different structures of Twitter and print media demand different legitimation practices. On print media it is normal practice to write out the names and titles of individuals addressed by or included in public sphere activity. If Twitter use is relatively ubiquitous, for example, and many individuals and institutions use Twitter, then there will be the option of addressing or mentioning an actor on Twitter using their Twitter handle. When few actors are on Twitter, it becomes less attractive to use. Writing out entire names and titles in a Tweet, for example, may take up so many of the 140 available characters that it becomes tedious or undesirable to carry on a discussion on that medium. Further, the lack of a critical mass of available actors or interlocutors on Twitter makes it impossible to address or talk to them, which likely takes away from perceived efficacy of a communication effort and therefore motivation to pursue communication on this medium. Furthermore, while there are indications that Twitter is used not only by individuals in government, but also officially by governmental bodies, this practice is not commonplace in all of the case cultures (Ellison & Hardey 2013). There is more indication of political participation and governance happening on Twitter in the North American case than in the other two.

This also gets at one of the basic tenets of the public sphere in theoretical terms: to whom is the content of the public sphere addressed (Fraser 2007)? If the state or other actors serving as the addressee of public sphere dialogue is represented on Twitter, then they can be directly and publically addressed. If the authority in question does not use Twitter, then it is unlikely that the results of negotiations or dialogue will even reach the addressee with decision-making capacities.

This notion would be supported by the overall output of Twitter content regarding this policy issue across the cases. Where Twitter use is common, there is more motivation and it is more rational to use that medium (as in the North American case), whereas if fewer actors are on Twitter, the likelihood that they will be reached even by addressing them in the public arena Twitter presents is low, then the use of Twitter for public sphere activity is less effective and therefore done less (as in the German case, and to a lesser extent, the Spanish case). The provision of a Twitter handle and the assumption of associated attention would add structure and differentiation to an otherwise large and unwieldy public sphere arena. Thus, where Twitter use is higher, the likelihood will be higher that the public will apply its "reflexive use of reason" to this arena (Bohman 2004:137–138).

Comparing the case cultures, there were also differences. In the Spanish case, authorization through personal authority and status was the clear preferred legitimation technique in the print media, often in

combination with other forms of legitimation. Therefore, those who are cited by the newspapers enjoy a privileged position in the struggle for asserting meaning in that public sphere arena. Their constructions of reality have more impact on politics, because getting messages into traditional media is further along the path of influencing politics than inserting messages into social media (Wolfsfeld 2011).

In this way, the German case was different in its use of authorization, because the print media more often included sources with less elite status, including students, civil society representatives, or individuals in their capacity as ordinary citizens. Thus, the access to authorization in the German print media was more inclusive than in the Spanish case. At the same time, the Twitter content of the German and Spanish cases did not offer a wider variety of frames than the print media. The implication of this is that authorization played a strong role in the frame-building process, and challengers to the frames provided in traditional media did not try to assert alternatives on Twitter, or that there simply was no challenge to the framing. Explanations for this are given in the following discussion section.

The North American case displayed rationalization as the major legitimation factor. On both mediums, but even more heavily in the print media, bikesharing was presented as a means to an ends. The variety of frames presented on Twitter is noticeably more than in print media. This indicates that the range of arguments admissible on Twitter is larger than in the print media, where norms of newsworthiness reign. Unique to the North American case was also the legitimation for opposition to bikesharing that it is a service oriented towards the needs or desires of wealthier social classes. This line of legitimation, not found in any of the other cases, was an aspect of the North American Twitter corpus, and suggests that Twitter in the North American case is also an arena for challenging the dominant narrative. This would serve to increase the legitimacy, but not the efficacy of Twitter as a public sphere arena.

All cases also showed the potency of the print media in that it was often cited in the Twitter content, while the opposite was seldom the case. This suggests an unequal power distribution between print media and Twitter: that print media is much more effective in getting messages, ideas, and frames from the print media to show up on Twitter. Thus, the print media has a stronger capacity to assert meaning than does Twitter.

11. Discussion

This research set out to study the impacts of social media on the normative goals of the public sphere as regards local policy options in a hybrid media context. The intersection of traditional and digital media was analyzed by comparing the discourse in print media and in Twitter as regards an explicitly locally-oriented policy issue. The focus of the research was on justification through framing and other legitimation techniques for support for or opposition to bikesharing as a policy related issue. The public debate surrounding the issue of bikesharing was analyzed through a quantitative content analysis to determine how that issue was framed and evaluated in print media and Twitter texts. Subsequently, a qualitative analysis (informed by the results of the quantitative analysis) was carried out to deepen and help explain the results of the quantitative analysis. Lastly, a discourse-analytical approach was used to further understand the legitimation tactics employed in the public debate around bikesharing. Context variables were three case cultures, the German case, the North American case, and the Spanish case.

This section places the findings of this research in the broader context of the existing literature. The guiding concepts for evaluating the results of the study follow the legitimacy and efficacy vectors for public sphere assessment as detailed above (see section 'Media and the Public Sphere'). First, the results are presented by case culture and links to the literature are made to explain the relevance of the findings of each case. Following that, the legitimacy of the public sphere arenas researched is explained. Third, the results of this research are discussed in light of recent work on participation and engagement, followed by a discussion of the political efficacy of the public sphere arenas analyzed. Finally, the evidence and implications of the deterritorialization of localized public sphere arenas is expounded on.

11.1. Different Cultural and Political Contexts – Different Debates

Overall, the findings show that there are substantial similarities in the way that the issue of bikesharing is framed and evaluated in print media and on Twitter. Especially in the German and Spanish cases, this was observable from the quantitative content analysis. In all case cultures, quotes from and links to mass media were commonplace, while the reverse was almost never the case. However, the qualitative analysis shows that the specifics of the framing topics themselves on the two mediums are most often not the same, even though the frames are. The print media content and the Twitter content aren't necessarily talking about *the same things*, but they are often approaching it *from the same angles.*

11.1.1. Framing across Mediums

In all case contexts in the study, Twitter was more personally oriented and more banal. This fits into Murthy's (2013) analysis of the banal reflecting unexciting and non-sensational, while offering opportunities for self-affirmation for the authors of such texts on Twitter. For researchers, Twitter offers a wealth of insight via seemingly banal texts that are public by nature. The legitimation tactics are different in the two mediums, and this is reflected in the banal daily communication rituals, or self talk (Goffman 1981), which is captured in part on Twitter. On Twitter a simple evaluation can be found in the banal; it is used as legitimation for approval or disapproval of bikesharing. This is not the case for the print media, where the mythopoesis is sensational or large-scale, authorizations involve almost exclusively prominent personalities, and rationalizations must be complete and convincing.

Frames in the print media were much more likely than those on Twitter to contain one of the aspects identified by Semetko & Valkenburg (2000) as 'generic frames' – conflict, human interest, economic consequences, morality, and responsibility. Further, frames in the print media content were much more likely to contain what Entman (1993) dubbed a complete frame – a problem definition, a causal interpretation, a moral evaluation, and/or a treatment recommendation. The space constraints on Twitter make it much more difficult than on print media to include full frames. That being said, the stylistic developments on Twitter did enable some users to include a full frame with identification, diagnosis, and prescription within 140 characters, but this was only rarely the case.

11.1.2. Framing across Cultures

11.1.2.1.   The North American Case

Positive evaluations with the mobility frame are the largest clusters in both mediums in the North American case. The economic frame in the print media is also strongly represented, and the Twitter content shows the sustained occurrence of all of the five focus frames. The Twitter content from the North American case reveals a greater breadth of frames than the other two cases; it employs a wider variety of topics and issues to legitimize bikesharing. This can be the result of the status overall as an outsider or challenger issue – there is less of an established discursive space and clear actors for discussing utilitarian cycling in the North American case. Utilitarian cycling, and thus bikesharing, is furthest from the status quo in the North American case (Longhurst 2015). Furthermore, the use of Twitter is closer to the normative ideals of the public sphere where it is more widely used: more viewpoints, perspectives, and reasons are admitted to the twittersphere in the North American case than in the other two cases, and Twitter is used by a higher percentage of the population in North America than in the other cases (Mocanu

et al. 2013). The variety of arguments and motivations used for legitimizing bikesharing is wider on Twitter than in the print media in the North American case, and the twittersphere is also infused with more challenger frames in the North American case than in either of the other cases.

Furthermore, due to the absences of an established discursive arena populated with actors that serves as an appropriate and expected discursive home for the issue, the framing on Twitter is more of a blank slate. The lack of large established civil society actors allowed commercial interests and political elites to determine the framing especially in the print media, without having to make compromises in the process of negotiating the meaning of bikesharing. This is the case because Twitter is not a strong and direct influence on print or mass media. As Wolfsfeld (2011) implies, the power game of influencing politics is not changed in a substantial way by social media past the step of mobilization. This is supposition is confirmed in the analysis of the North American Twitter and print media corpuses. In the North American case (as well as in the Spanish case), there were no actors with established access and effective strategies for influencing mass media.

An important aspect of social media mobilization, however, is that the issues brought up by individuals can be related to by others with similar ideas or persuasions. This allows the issue to become a social issue rather than remaining a mere individual experience (Mills 2000). This allows for the phenomenon of association, notably described by Tocqueville (1835/2003): "As soon as several of the inhabitants of the United States have taken up an opinion or a feeling which they wish to promote in the world, they look out for mutual assistance; and as soon as they have found one another out, they combine. From that moment they are no longer isolated men, but a power seen from afar, whose actions serve for an example and whose language is listened to" (Tocqueville 1835/2003:598). This transformation from an individual experience through association to something of a social issue can be observed in the North American Twitter corpus. While mobilization employs frames, it is likely strongly affected by long-term first-order agenda setting, which is beyond the empirical reach of this research.

The Twitter corpus from North America contained the lowest ratio of tweets with links. Links lead to other web content, oftentimes to the websites of media organizations. With just over half the tweets from the North American case containing links, this suggests that the tweets are more often used to have their own, stand-alone meaning than in the other cases where links are included in a higher percentage of tweets. Hashtag use was also high as were user mentions and tweets coded as 'functional' (part of a dialogue or conveying some acute message with practical implications intended for a specific audience).

These are indications that point to dialogue and exchange happening on Twitter, as opposed to only reproducing or sharing what media outlets or other web content has produced.

The economic frame and the environmental frame were both prominent in the North American print media corpus, and only to a lesser extent in the Twitter content. The economic frame was often employed on a micro- or individual level in Twitter, while in print media it was most often applied on a more macro level, referring to economic impacts on municipalities or businesses rather than the individual. This finding offers cautious support for the notion that it is more common to find debates relating to obtrusive issues on Twitter rather than non-obtrusive issues.

Media houses in liberal media systems will be more likely to focus on economic issues and not social justice issues. This is not only because of the commercial pressures on media organizations (Hallin & Mancini 2004), but also because of the strongly represented ideology of economism (Dahlgren 2009). This may be attributable in part to the relationship of advertisers with the print media complex in the liberal media system, where media outlets can be expected to have an interest in covering issues that are relevant to advertiser's target audiences or lend themselves to ad placement, or it may be an indication of desired regular readership with the financial resources to subscribe to newspaper content. The peaks in output where economic events associated with bikesharing would attest to this (refer to the qualitative analysis on the economic frame where, for example, the firm REQX acquired a bikeshare provider). Because media outlets in the North American case receive fewer financial subsidies than the other two cases, they become dependent on relationships with advertisers (Schudson 2002; Hintz 2009).

If major commercial news outlets neglect issues that nonetheless have interested publics, it fits that alternative framing is found in the Twitter content. This explains the examples of the social and community frame and social justice issues and their strong presence in the Twitter content, as well as the case of bikeshare workers pushing for unionization, which emerged as a challenger frame on Twitter but received little attention in the print media content.

A commercially oriented press, with a greater tendency to be influenced by the interests of advertisers rather than be instrumentalized by political actors, will have an interest in the financial aspects of large infrastructure projects like bikesharing in large cities, partially because the sponsors of bikeshare may be the same companies (or affiliates) of advertisers. Many of the large bikesharing programs in North America are funded through private sponsorships, which enable the sponsors to advertise on the bikeshare bikes or stations. In contrast, corporate social media like Twitter have more flexible access to

funding in terms of topics covered. Because they can more precisely identify the interests of specific users (Fuchs 2014a) or due to lower overhead costs, it may be possible for corporate social media to generate income through advertising with less regard for the topic of the content, which is not produced directly by the organization.

11.1.2.2.   The German Case

The German case shows strong similarity between Twitter and print framing. Both mediums are dominated by the mobility frame and positive evaluations. The only other frame of consequence is the economic frame. This is likely due to the fact that the culture already has a discursive space established, including actors, where this topic fits: utilitarian cycling has a long history in Germany and is somewhat normalized (Ebert 2010; Oldenziel & Albert de la Bruhèze, Adri 2011; Oosterhuis 2014). Thus, there are established civil society actors in the German case that represent cycling interests (Schwedes 2011). This in combination with a vertical media system that is accessible and oriented towards inclusiveness (Hallin & Mancini 2004) fits in well with Lijphart's (2012) notion that in corporatist democracies, established interest groups in national form are (at least perceived as being) a part of decision-making processes on the policy level. Therefore, the German case already had a discursive structure, populated with actors and frames which provide a pre-existing discursive space for the public debate around bikesharing. This type of pre-established discursive space was not present in the same way for the other cases.

The German case is also the case with the highest ratio of links and lowest percentage of user media contained in Tweets. This suggests that Twitter was used as an announcement platform for already existing media content. A comparison of the frame distribution (see figure 25) as well as the qualitative analysis of the Twitter content confirms this. User experiences or impressions, or original statements independent from mass media were less common than tweets quoting mass media and advertising. Further, the use of hashtags is relatively infrequent. Hashtags are often used to promote or establish an issue or a frame (Hemphill *et al.* 2013; Parmelee 2014; Qin 2015); this was not found to be the case in the German Twitter corpus. Thus, Twitter itself is not used extensively for individuals to voice their own inputs into a discourse in the German case, but rather to promote and share the inputs of others. If there were challenges to or the promotion of alternatives to print or mass media framing of the issue of bikesharing, they did not take place on Twitter in the German case.

The amount of 'functional tweets', however, is relatively high. This indicates that dialogue (not only one-way communication) is at least a minor aspect of Twitter use in the German case. Additionally, both mediums in the German case show the lowest ratio of negative evaluations of bikesharing, while the

percentage of ambivalent evaluations for both is the highest amongst the three cases. An explanation for this could again be the vertical media orientation (Hallin & Mancini 2004); people feel that their ideas are represented in the discourse, so they don't need to represent them themselves or use Twitter to vent critique.

An alternative or supplementary explanation is that the issue of bikesharing represents a practice that is less 'out of the ordinary' in the German case and therefore is not as politicized as in the other cases. As mentioned above and as shown in the quantitative analysis, the public debate on bikesharing falls clearly in the category of mobility. While there are many cities and towns with bikesharing programs within the German case, none of them are high-profile or have endowed the city and cityscape with a new image, as is the case in Paris, Barcelona, or Washington, D.C. If bikesharing is perceived as a minor tweak or technical adjustment to overall mobility practices, it can be explained that technical issues are not as subjected to politicization as are issues that represent more of a departure from the status-quo, as bikesharing does in the other cases. As a technical issue, it is unlikely to become an activist issue or be framed in a way that it spills over into the mass media (Pfetsch *et al.* 2013). This outcome is observed in this research.

11.1.2.3.   The Spanish Case

One path towards the classification of bikesharing as a technical issue was described above for the German case. In the Spanish case, the result of the struggle for meaning attribution is also that bikesharing is most often classified as a technical issue. The meaning and the establishment of bikesharing as a technical issue is linked to the high level of political parallelism in the print media. The dominant frames – mobility, environment, and economics – are those issues that are mentioned by politicians and public officials in quotes reproduced by the print media complex. This fits into the established theory of political parallelism of the press in the polarized pluralist media system (Hallin & Mancini 2004), with strong instrumentalization of the press through political actors. The pattern of legitimation in the Spanish case also fits with this: legitimation through personal authority was high in the print media content. The Spanish Twitter corpus displays the highest ratio of tweets with a negative evaluation of bikesharing, potentially a result of the horizontal, elite-oriented communication in the print media – which has the highest ratio of positive evaluations of all mediums and all cases.

The Spanish case was the only case of the three where the most frequent frame was not the same on Twitter as in print media. This however, is clearly attributable to the large number of tweets surrounding one event: the sponsorship of London's bikeshare program by Spanish bank Santander. The large influx of tweets surrounding this issue (see section 9.3) caused the frequency of the economic frame to be higher

than any other frame in the Spanish Twitter corpus. Aside from that, the Spanish Twitter corpus reflects the framing of the print media corpus in quantitative terms, leading to the conclusion that it is strongly under the influence of the mass media. While there was a high percentage (71%) of Tweets containing links to other web content, over 30% of the tweets contained user media, the highest among the three cases. Even if this was still a minority of the content, it suggests that a substantial number of twitterers inserted their own ideas into this public sphere arena.

If we accept that a pluralist political structure as that of Spain (Lijphart 2012) will be characterized by a multi-polar civil society landscape with many organizations attempting to influence the media because they are excluded from decision-making almost as a rule, we would have expected the debate on Twitter to be broader and stronger than was observed. Following Pfetsch *et al.* (2013), we would only then expect civil society action, or in this case an alternative framing, if the issue at hand can be framed with respect to policy questions *and* is non-technical. In the Spanish case, however, the qualitative presentation of the issue in the print media presents it as a technical issue. This tendency is also observable in the Twitter content, but the limited timeframe of this research does not allow for stating with certainty that the technical handling of the issue on social media was caused by the technical portrayal of the issue in the mass media.

Bikesharing in the Spanish case is handled as a policy issue, but it is also presented as a technical issue (Anaya & Castro 2012). The discourse in the print media gets very technical, and often the critique on Twitter is rather technical in the sense that it is often not critique based on broader ideologies in terms of redistribution or along other common right-left vectors, but rather critique based upon the functioning or management of bikeshare programs. The Spanish case displayed both the highest ratio of positive evaluations (76.6%) among the print media corpuses, as well as the highest ratio of negative evaluations (9.7%) of all three Twitter corpuses. The negative evaluations were often of a technical nature, and this fits with the relative absence of activist or opposing content united by a main frame. There was no evidence of civil society coalition building and there were only rare attempts to connect the issues to larger conflict issues.

All in all, the Banco Santander sponsorship of London's Bikeshare gave a large boost to the topic of bikeshare being present on Twitter – by a substantial margin the single largest event responsible for a large increase in Twitter activity connected with bikesharing during the period investigated. This could also be attributed to an elite-oriented media system, where financial news may receive extra attention and emphasis. The other side of this indication, is that bikesharing is not generally considered very

newsworthy and is worth mention most often when the issue it is associated with brings its own newsworthy credentials.

The environmental frame was rather heavily used in legitimizing support for bikesharing in the print media corpus, but is meagerly represented in the Twitter content. While economic and mobility issue considerations are connected with bikesharing in the Spanish Twitter content, the environment frame may not spill over because of Twitter's structural preference for obtrusive issues.

The findings from the Spanish case show that the twittersphere is used for talk of technical issues, but in that way it also serves more as a personalized information platform rather than for challenger discourses, exchange, or as an arena for public debate. In this case, it is shown that [niche] news organizations and opinion leaders focused on finance are much louder and more present on Twitter than citizens or institutional actors debating the organization of their environments. In the Spanish case then, we have found support for Murthy's (2013) hypothesis that "most tweeting 'opinion leaders' reflect influence already present in traditional broadcast media, [so] Twitter does not represent a significant redress in systems of communicative power. Twitter may be exposing us to a selection of new viewpoints and voices, but the actual influence of these voices may be relatively limited" (Murthy 2013:31).

11.1.3. The Culture

The drop in output in all cases and all mediums around week 11 of the study can be explained by the Christmas holiday, celebrated in all of the case cultures. Not only does the print media content drop off to almost nothing, but the Twitter content also sinks in this period. The staff of news organizations are reduced in this period for the holiday, and the lack of coverage of the issue of bikesharing underlines the routine, every day, and non-sensational nature of the issue. Notable is that the Twitter content also drops off at this point. While some bikesharing services in the German and North American case stop operations in the winter, there is no indication that those that are running stop service during the holiday. There are likely many reasons, and I postulate two explanations for the reduction in the Twitter content: either individuals tweet less, also about their own experiences with bikesharing or other during the holiday, or individuals tweet less about the issue when the news media stops covering it. These two explanations likely work together, but the empirical data used in this study cannot discern how much of the reduction is attributed to which reason.

As described earlier, the meaning attributed to an object in a culture will have significant repercussions in the way it is handled in policy. "If a nation, a region or a city is to have a cycling policy, what might this actually mean in light of cultural diversity? What are the pressures that it needs to deal with and how might it approach them? How can a single policy be made inclusive if it covers such diversity: what assumptions are (to be) made in such policies about the bicycle user(s)?" (Cox 2015b:1–2). These questions get at the core of the impact of the cultural meaning of cycling on public perception, debate, and policy. Bikesharing policy is irrefutably connected to the cultural meaning of cycling. "The bicycle is a complex socio-technical object whose meaning and uses are shaped variously through its histories, production and uses" (Vivanco 2013:26). Not only does the meaning of bikesharing vary by culture, but the meaning and use of communication mediums do as well.

The quantitative analysis shows the relative similarity in the framing of bikesharing, but the variance in the qualitative analyses suggests that culture and context play a significant role in determining how bikeshare is talked about. This is evident in the relative position of the economic frame and general low level of debate (in terms of content) in the German case. Bikesharing is the least contested in the German case. Furthermore, the ratio of negative evaluations to positive evaluations is lowest of the three cases for both mediums. This can be attributed to the cycling culture, which plays a strong role in formation of the perception of cycling. In the German case, cycling is nothing new or sensational, it does not represent a drastic challenge to the status-quo. This is because of the long history of utilitarian cycling in Germany (Ebert 2010). In the US and Spanish case (and especially in the US case), we can see that the presence or thought of cycling is a larger departure from normality. Thus follows the headlines, the conflicts, and the higher newsworthiness.

The North American case displays somewhat more variance in the framing of the issue between mediums compared to the other two cases; still, bikesharing was most often attached to mobility considerations and evaluated positively on both mediums. There are likely two main reasons for the finding of the higher variance in framing in the North American case. First, the issue of cycling in general, and bikesharing as a part of that, is more of a departure from the status quo in North America than in the other two cases. While the Spanish case is closer to North America than Germany in this respect, bikesharing in Spain has a somewhat longer history than in North America (Anaya & Castro 2012); this may take away from the quasi-sensationalism still felt in North America at the prospect of bicycles of any kind being used for utilitarian mobility or being present on roads at all. Second, the wider variety in framing in the North

American case is explainable in part because cycling as a whole is a much more marginalized phenomenon that has only recently received revived attention (Pucher & Buehler 2017). There are only weakly established structures providing a framework for discussions about its regulation and determining its place in the discourse. Historically, there has been interest in cycling in North America, but only in a narrow segment of society (Longhurst 2015). Thus, the issue public was not established enough to take charge of the issue of bikesharing and determine its framing and the general course of the discourse.

The larger variety in framing in the North American case as compared to the Spanish case could be attributed to the Spanish case's longer history with bikesharing. Bikesharing may no longer have been a blank slate to be associated with other issues at will, because by the time of this study it had already been established and gone through this process. Bikesharing already crashed onto the scene in Spain in 2007 when Bicing began on a large scale in Barcelona. While Washington D.C. tried a bikeshare in 2008, Montreal's Bixi Bikeshare dates back to 2008, and other smaller cities experimented with the concept, it was not until 2010 that Capital Bikeshare began operating a bikeshare in North America on a scale large enough to be seriously disruptive. Even when Citibike rolled out in New York City in 2013, it was still rather uncharted discursive territory.

Likely, the introduction of bikesharing in the Spanish case was also framed strongly by public officials and other elites involved in carrying out the projects, and due to the nature of the media system in the Spanish case, alternate frames were excluded from the beginning, due to a preference for the mobility, environmental, and economic frames, which were also the most common frames cited by public officials in their statements used by the print media producers. While the mobility and economic frames are then reflected in the Twitter content, this is much less the case for the environmental frame, which was not taken up on Twitter in the Spanish case even though it was heavily used to rationalize the policy decision as a legitimation tactic.

11.2. Non-Obtrusive Framing: Environmental Issues

The use of the environmental frame to legitimize bikesharing is found to be relatively strongly represented in the North American and Spanish print media (the environmental frame was found in 13.2% of North American print media text items and 20.6% of print items from the Spanish case). This is not reflected in the Twitter content of either case. This finding fits into the media-effects theories on obtrusiveness (Zucker 1978). While economic issue-associations to bikesharing can be non-obtrusive (for example: the City will shoulder the costs of the new bikeshare project), they can also be obtrusive (the City's bikeshare will raise its membership fee, bikeshare docks replace car parking). This is not the case with environmental

issues, which, while they can be used to legitimize policy decisions on structural transportation practice, they remain an abstract concept.

A city changing transport practices may have a noticeable impact on air quality or emissions, for a single individual this is much less the case. While bikesharing could be a prominent part of a city or municipality's administrative plan to address environmental issues on a large scale, for individuals the use of bikeshare for any given trip (or even regularly for an entire individual) is not likely to make a recognizable contribution to environmental goals. This could be an explanation for higher frequency of the environmental frame in the print media of the North American and Spanish cases than on Twitter. Public officials and other policy-elites have more access to the print media production process than do average citizens, and they used this to frame the issue. Here the point is not whether legitimations using the environmental frame were accepted or not, but simply that they were not produced or reproduced by twitterers, likely because environmental effects are not clearly and directly experienced.

The qualitative analysis revealed exactly that: the print media tended to address the societal or institutional costs, costs for the city, state, or company of providing bikesharing. On Twitter, there was more focus on the costs to the individual. Twitter is a personalized form of communication, thus the messages are created by individuals without necessarily thinking of qualities such as newsworthiness, and often reflect routine events, experiences, or they are thinking or experiencing at the moment (Murthy 2013). In this way individuals also use "Twitter for both the active reproduction of or resistance to dominant discourses, as well as for the contestation over the meaning of cultural, national, and social institutions" (Norman 2012). The content analyzed in this research indicates that the communication patterns on Twitter regarding bikesharing, while consisting more of banal content as opposed to criteria of newsworthiness, is also more oriented toward obtrusive aspects of bikesharing.

While print media also targets individuals, it produces texts that feature individuals only if they are somehow extraordinary, sensationalized, or have some personal status. Twitter is also produced by individuals about themselves, including individuals who may not be considered extraordinary. Therefore, the focus is on their costs, their mobility, or their health – but not their environment – because environmental changes are more distant. The environment frame failed to gain reception, reproduction, or just plain use on Twitter because it is a non-obtrusive issue. In local policy legitimation, Twitter displayed a preference for issue obtrusiveness.

11.3.   Inclusivity of the Public Debate

This research provides concrete evidence as to who took part in the public debate on the issue of bikesharing on Twitter, and how this differed in the various mediums and across the three cases. The results of the actor analysis indicate that the ratio of contributions to the public debate on Twitter are higher from citizens and civil society when it comes to routine political issues than in more exceptional political moments (see figure 28). In both the German and the Spanish cases, the percentage of tweets originating from citizens or civil society were just above 50%, and in the North American case, this was at 40%. In both the German and the Spanish cases, tweets stemming from the private sector made up large sections of the Twitter content. In all three cases, tweets from politicians or governmental accounts made up a small percentage of the discussions.

Harder *et al.* (2016) carried out a similar actor analysis of contributors to the public debate on Twitter regarding the Belgian national election in 2014. Although their categorizations were different than the ones used here, their findings showed that only up to 26% of tweets came from citizens or civil society, 40% came from politicians or political parties, and 34% were attributable to journalists or media outlets. (Their metric found that 12.5% of the tweets came from citizens, and 13.7 were categorized as 'other', a category which included civil society organizations and non-media business organizations.)
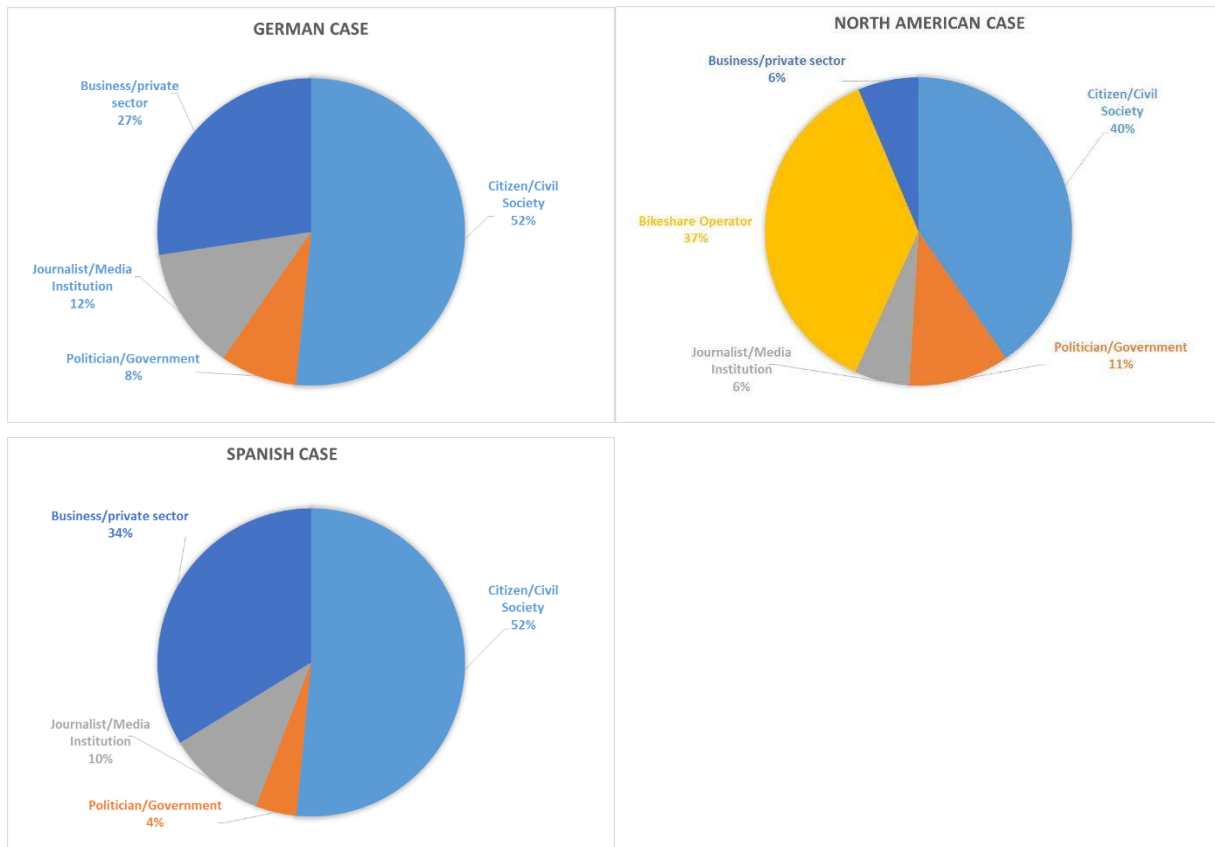
Figure 28 - Compositions of Tweet Authors in Each Case

The findings of this study imply that Twitter as an arena for public debate comes closer to a normative ideal of the public sphere for the case of bikesharing than national elections. This can be explained by the obtrusiveness (Zucker 1978; Walgrave & van Aelst 2006) and local nature of the issue, as well as its non-sensational political nature and low barriers for participation. Decisions about the organization of transport and cities are ongoing, while election campaigns and sensational phenomena are punctual events. The indication may be that Twitter, albeit remaining far from perfect, is a better discursive space for accommodating the all-affected principal (Fraser 2007) so crucial for the normative goals of the public sphere.

This part of the analysis cannot account for the types or content of contributions, many of which as can be judged from the qualitative analysis are not explicitly political in nature, much less meet the criteria of the ideal speech situation (Habermas 1984a). It does, however, establish a sense for how far Twitter is from achieving the normative goals of the public sphere. If, as in all three cases, significant amounts of the content given into the debate come from the private sector, as in the German and Spanish cases, Twitter falls far short of an ideal type public sphere. In the North American case, bikeshare operators

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account for a large segment of the actors involved in the Twitter discussion. These are both private sector actors and civil society actors. Previous research has suggested that in the United States, Twitter is the social media medium of choice for local governments to interact with citizens and that social media use by government is more common there than in other countries and regions (Ellison & Hardey 2013). Thus, there may have also been more of an incentive for individuals in the North American case to directly address the government (or its agents as bikeshare operators) via Twitter because of a minimal presence on the medium.

Still, the category of citizens and civil society in the North American case does not even constitute half of the total actors, leading to the same conclusion: Twitter does not represent an ideal type public sphere. That being said, Twitter as an arena for public debate varies depending on the culture, political context, and type of issue at hand. Obtrusiveness and localness may be issue characteristics for which Twitter provides better conditions than if the issues are unobtrusive and distant (both geographically as well as conceptually) from citizens, as in more punctual and sensational events.

11.4.   Engagement and Participation in the Online Public Sphere

This section will briefly refer to empirical examples political participation on Twitter, with a specific focus on the communication behavior that Pfetsch *et al.* (2013) expect to bring about frame spill-over. Examples of spill-over found in this research will be directly addressed and employed as examples. In this way, it connects the results of this research with the literature with digitalization, political participation and engagement through communication. In evaluating the political efficacy of online public debates, this research can provide an answer to questions of whether political participation as "conventionally understood" is enabled through digital media platforms such as Twitter, or if they "dilute the meaning of politically engaged citizenship" (Schlozman, Brady & Verba 2013:532), at least for routine local political issues.

Pfetsch *et al.* (2013) suggest that there are three key factors for challengers to existing framing of issues in the public debate that will make the spill-over of their frames from social media to mass media most likely. These factors are coalition-building, agreement on a master frame, and engaging prominent sponsors. These are all forms of political participation, and are in theory open to ordinary citizens in the cases studied here.

Achieving spill-over from Twitter to print media, or more generally from social media to traditional media, is an important process to understand because it will determine a lot about the potential of social media to contribute to the public sphere as concerns the political efficacy vector (Fraser 2007).

Wolfsfeld (2011) has suggested that the goals of actors seeking to influence politics through social media are four fold: mobilizing support, getting messaging or stories into traditional media, influencing public opinion to gain sympathy, and impacting politics. He posits that social media can help in the first of the four goals for impacting politics, but that the benefits and democratizing potential of social media is limited to mobilizing support; once that has been achieved, the achievement of the remaining three goals faces similar barriers or opposition to the traditional path to political influence (Wolfsfeld 2011).

The public sphere "is capable of assuming a political function only to the extent to which it enables the participants in the economy, via their status as citizens, to mutually accommodate or generalize their interests and to assert them so effectively that state power is transformed into a fluid medium of society's self-organization." (Habermas 1992:431) The ways in which the political relevance of the public sphere is exercised is a contingency of cultural and political systems (Hallin & Mancini 2004; Sparks 2005; Lijphart 2012).

11.4.1. The Political Efficacy of Twitter in the Bikesharing Debate

In all cases, issue and frame spill-over from print media to Twitter was observed. In the North American case, the organization of interests and coalition-building, as well as unification behind a master frame on Twitter is observable, albeit with varying degrees of (limited) success in leading to spill-over. The German case provides one example of organized civil society use of the twittersphere to affect the public debate (coalition-building), but agreement on a master frame was not readily apparent in the Twitter corpus. Spill-over from Twitter to print media did not result. The Spanish case lacks examples of coalition-building and organizing on Twitter, and does not reveal any issue or frame spill-over from Twitter to print media. On the other hand, there is clear interest accommodation and political instrumentalization of the print media in the Spanish case, while only rare isolated examples of attempts to exert issue influence by political challengers on Twitter.

The German Twitter corpus reveals some political activism and activity that challenge the status-quo. There are two main sources for this in the German case: opposition parties and civil society actors. In the case of the opposition parties, there was the Pirate party, in the opposition in the state parliament in Berlin, who tweeted about their official questions with implicit criticism regarding the contract and

procurement procedure for the bikesharing program of the state of Berlin. This received a small amount of attention as indicated by a few retweets, but did not receive support beyond a small number of individuals. Then there were non-party civil society actors. These latched on to suggestions for expanding a bikeshare program between municipalities in the state of Hesse. The initial suggestion on Twitter came from the large national bicycle Lobby ADFC, and was then supported by a few local civil society actors in the form of Critical Mass movements. (Critical Mass is an international, decentralized movement that demonstrates for cyclist rights as members of traffic).

In the former example, there was no real coalition-building, nor was there evidence on Twitter of unification around a master frame. The issue itself was reported on in the print media corpus, but there because parliamentary actors discussed the procurement process, rather than through civil society pressure. The latter example saw minor-level coalition building and support of a unified frame, although this could hardly be called a master frame. There was no evidence of spill-over of the issue into the print media from Twitter. (The results of the strategy of the ADFC were, however, able to be seen on Twitter, as links to local print media articles were tweeted. The ADFC in this case had already established a strategy for inserting frames and issues into the mass media that relied on their status as an established advocacy group, and did not rely on coalition-building on social media.)

The North American case did reveal coalition-building, unification behind a master frame, but only negligibly prominent frame sponsorship. The examples for this include the campaign for access to bikeshare for the poor and unbanked, and the rallying around bikeshare workers aiming to unionize, both described in the qualitative analysis above (section 9.2.2.). The latter, the case of unionization, can be used to illustrate the process using Pfetsch *et al.* (2013) three factor framework for potential triggering of spill-over: first, there was coalition-building present. As well as an outpouring of support from citizens and bikeshare users, a labor union and numerous local bloggers, urbanists, and activists became involved, uniting behind the master frame of the right to unionize. Whether the *Washington Post* reporter who covered the story can be deemed a 'prominent sponsor' is questionable, she may be better classified as part of the coalition for the frame. Another possibility for a prominent sponsor may be the bikeshare worker who was fired by Capital Bikeshare amidst moves toward unionization. While not a classically prominent individual, he was dubbed a hero by the issue public on both Twitter and Facebook and continued to push the issue. Prominent frame-sponsors who would more clearly fill the role were not found in the Twitter or print media content.

These issues did experience brief spill-over from Twitter to print media, but it was minor, only a handful of articles in the most effective case, and the print media did not continuously employ the frames or cover the issues. Thus, the spill-over was not sustained, arguably it barely met the minimum requirements needed to dub it 'spill-over.' As mentioned earlier, these issues did feature more prominently in civil-society newspapers and blogs, as well as other non-mainstream news outlets, but only barely in major newspapers.

The Spanish case revealed none of the three factors for frame configurations that trigger spill-over. There were, as in the German case, opposition parties that used Twitter to make demands of the governing actors. This, however, did not lead to any coalition building or unification behind a master frame. While there was a certain amount of discontent with various aspects of bikesharing expressed on Twitter, and the Spanish Twitter content contained the highest ratio of negative evaluations, no common issues were established an pursued, no examples of coalition-building, master frames, or prominent challenger frame sponsorship was found.

11.4.2. Digitally Networked Participation, Information, or Mobilization?

The above discussion on issue and frame spill-over seems to support Wolfsfeld's (2011) thesis that social media can serve to mobilize around an issue, but not necessarily to take the further steps of affecting politics. The next step towards influencing politics is then to get messages and issues into traditional media (Wolfsfeld 2011). We can observe this in the North American case, for example with the unionization issue. Eventually the bikeshare workers did unionize. It is beyond the scope of this research to specify exactly what impact the public debate in print media and on Twitter had in the process of arriving at the outcome of unionization, but the involvement of an established labor union and their own communication via other mediums suggest that there were other important steps taken and that support on Twitter and the very limited spill-over into the print media was by itself not sufficient for creating that outcome.

Similarly, with the social/community frame's relative prominence on Twitter and the thematization of access to bikeshare for the unbanked and poor, there is evidence of mobilization. In other words, initial support was mobilized on Twitter (and possibly on other social media), which took place over a relatively long period of time. The issue was sustained on Twitter, but relied on a narrow group of supporters and sponsors who maintained attention amongst an issue public. They succeeded in getting stories into niche media and blogs, but not prominently into traditional mass media. While the issue was identified as a problem in the print media earlier, it surfaced in its own story in a major print media outlet only after the government in Arlington County worked with the bikeshare provider to create a solution. In other words,

a solution to the problem identification in the framing used on Twitter was put through; it was the solution, not the problem, which was then reported on in the mainstream media. In this way, Wolfsfeld's (2011) criteria can only partially be applied to explain what happened. The example from Arlington County in the North American case shows mobilization on Twitter, but the study does not reveal evidence for spill-over from Twitter into traditional media on a scale that would influence public opinion enough to garner support on a large scale. Here again, while beyond the empirical reach of this study, it is likely that other channels of influence were used that created sufficient conditions for this outcome.

The two examples above are from a liberal media system with a strong media logic, where the step of getting stories into traditional media is especially crucial for affecting politics. In corporatist political systems as in Germany, where political logic is much more prominent (Esmark & Mayerhöffer 2014), the path to influencing policy may not be less contingent on media communication. That fits with the results of the present empirical analysis. Large organizations which are embedded in the policy process could use social media to affect the agenda of traditional media, but also rely on direct routes to mass media agenda-setting and political decision making. This can explain the lack of challenger activity on Twitter in the German case, where activism pursued other paths to impacting politics. In the Spanish case, where the political elite is largely responsible for media agenda-setting (Maurer 2011) and there is much less consolidation of civil society actors, there is greater distance from the citizen to the policy process. We can see this in the lack of challenger publics springing up around challenger or activist issues on Twitter as could be expected with strong political elites determining the media narrative. Rather we observe personalized complaints and experiences that do not link to larger challenger issues or unify behind master frames, but remain fragmented.

11.4.3. Participation in the Debate Across three Cultures

The North American Twitter displays the largest deviance from the framing of the print media, the German case shows the most similarities in framing between the two mediums. The German and Spanish cases show less engagement of interlocutors on Twitter than in the North American case.

In the North American case, institutional actors, such as businesses and government actively solicit input from citizens on Twitter. There are examples of participation in naming bikeshare programs, determining how and where bikeshare programs should be expanded and/or implemented, invitations to discussions and open houses, offers for interested individuals to use bikesharing data, and one large bikeshare program uses Twitter as an online help-desk, to name a few. Thus, twitterers have opportunities to engage and at least some opportunities to give input for certain aspects of decisions that are to be made in the

North American case. (What happens with this input is beyond the scope of this research, the point here is that it is asked for and reacted to by institutional actors; interaction takes place between citizens and between institutional actors and citizens.) While the link is certainly not direct, this may be connected to the use of Twitter in the North American case as a medium for challenger discourses. The insertion of topics into the twittersphere while decisions and trajectories can still be changed is rather unique to the North American case, possibly prompting the feeling that someone is listening (and that someone may even have influence on the decision). This could serve to justify the selection of this arena as somewhere to promote challenger or alternative framings and agenda-setting, which may go beyond the notion of the public sphere as an arena for the potential to participate in the formation of [something like] public opinion or generalization of political will (Habermas 1992).

Further, there is no clear overarching actor or body serving as the representation of bicyclists in North America, let alone bikeshare interests. Thus, in the absence of large interest groups with the capacity to bring about something akin to tripartite pacts (and spread public awareness thereof), the discourse is broad, encompassing many topics and actors, as would be expected from Lijphart's (2012) characterization of the function of civil society in the North American case.

In the German case, the largest national bicycle lobby (ADFC) carried out a survey used for promotion of bicycle infrastructure, on which there was a question on bikesharing. This way, citizens were invited give input into the bicycle lobby's advocacy work. While the call to participate in the survey circulated on Twitter before the period of data collection for this study began, the results of the survey were thematized on Twitter. This allowed the individuals who took part (and others) to be aware that something has happened with their input if they indeed participated in the survey. The results were featured prominently in the print media as well. This is an example of the horizontal orientation of the German media system (Hallin & Mancini 2004), where citizens can see the results of their involvement through the process of what Lijphart (2012) describes as 'interest group corporatism.' The large civil society behemoth of the bicycling sector, the bicycle lobby ADFC, organizes citizen influence and directs it at decision-makers. The German Twitter corpus reveals very little political participation and even less activism regarding bikesharing or related issues. Citizen input organized through civil society organizations is picked up and clearly observable in the print media corpus, indicating that there are other channels for promoting alternative frames in the German case. Further, references to and quotes from ordinary citizens are commonly featured in the German print media.

This stands in contrast to the Spanish case, where it is less common to cite ordinary citizens in the print media, but where ordinary citizens bring in their views and experiences somewhat more often on Twitter. In the Spanish case, there is no systematized engagement of the public on Twitter. Ideas and opinions from citizens are not sought by decision-makers, and the topics largely reflect those of media organizations. The complaints that occur are also not directed at a specific authority, but complaints are made generally to an unspecified audience (in the North American case, for example, complaints are sometimes directed at responsible actors).

What could be expected from Spanish Twitter in this case would be a much more diverse portrayal and framing of the issue. "If the media were to fulfill their democratic role, they would offer citizens a wide variety of opinions and perspectives, not just the narrow spectrum represented by those who have attained political power." (Schudson 2002:258) In the Spanish case, Twitter does not seem to offer more breadth to the debate as it is framed by the higher-status actors whose legitimations are featured in the print media.

11.5.   Spill-Over

These three cases confirm the framework of Pfetsch *et al.* (2013): The only case where spill-over from Twitter to print media was achieved was in the North American case, where still really only two of the three factors (coalition-building, unification behind a master frame, and prominent frame sponsorship) were present. In the other cases, there was no observable spill-over from Twitter to the print media, or there were other, more likely explanations for why issues on Twitter found their way into the print media corpus.

These examples further fit in the broader expectations of Pfetsch *et al.* (2013). They qualify the expectation of issue spill-over from social media to mass media with two further criteria: if the issue is policy related and non-technical, spill-over is more likely. The issue of bikesharing is certainly policy related in all three cases. However, the cultural contexts of the German and Spanish cases lead bikesharing to be perceived and portrayed as a technical issue. Accordingly, as the authors expect, there is no spill-over from social to mass media.

Much evidence exists that there is spill-over from print-media to Twitter, in all three cases. The examples of Cologne's bikesharing program being portrayed on Twitter according to the coverage in the *Kölner Stadt-Anzeiger*, or the case of Berlin's bikeshare serve as examples of this. In these cases, media actors inserted the articles directly into the Twittersphere. Similar examples abound in the North American

Spanish cases. Media organizations are easily poised to access and influence the debate on Twitter, and can take advantage of various advantages in doing so. Pre-fabricated tweets, which can be tweeted from a user's Twitter account by clicking the Twitter button offered on many internet news sites allow not only the story to be promoted in the name of the user, but the message in the tweet is also formulated by the media organization. Further, the structural advantage of news media organizations in the non-digital communication context is carried over into digital media in a hybrid media system. The Twitter accounts of news organizations have more followers, and their tweets generate more likes and retweets than those of most citizens. This was observed in the Twitter corpus, and is in line with the critique of Fuchs (2014b) that social media are subject to similar power imbalances as exist in traditional media communication settings. Most news organizations allocate vastly more resources to their Twitter accounts than average citizens do, and they receive more attention as a result.

11.6.   Localized and Internationalized Public Sphere Orientations

As described above in the section entitled 'Media and the Public Sphere,' the arenas of contemporary public sphere manifestations often display little regard for formal borders and the structures that formed the initial conceptions of the public sphere. In this research, it was observed that both participants and addressees of public sphere activity were not clear categories. Just as state representatives were not conceived of as the only responsible authorities, formal citizenship was not a criteria for contributing to public sphere arenas on Twitter. This provides empirical evidence of the relevance of revisionist conceptions of citizenship (O'Byrne 2003; Ong 2006), and the de-nationalization of public spheres (Fraser 2007).

It is common practice for news media organizations to reorient national coverage to for local appeal, emphasizing relevance for local audiences (Tromble & Wouters 2015). This practice is not exclusive to organized new media production. This phenomenon was also revealed in the qualitative analysis of the content in this study, not only in the print media corpuses, but also in the Twitter content; it featured most prominently in the Spanish case.

The European cases refer rather often to foreign experiences with bikeshare. The North American case does so only rarely. Does it matter "that, online, geography no longer determines what media are available means that it is possible to read the New York Times, The Times (of London) and The Times of India from anywhere" (Sparks 2005:34)? While foreign newspapers were not included in the print media corpus, it became apparent that twitterers were reading foreign news sources, because content from other countries and links to foreign media were found in the Twitter corpus. While this was true for each case,

referencing foreign cities and their experiences with bikesharing was most common in the Spanish case, and especially on Twitter. This is explainable by the linguistic connections to other Spanish speaking populations, and can have important consequences for policy debates.

Issue publics on Twitter span political and geographic borders, and linguistic linkages enables twitterers to cite tweets or receive content from far beyond their political public spheres. This enables content and mass media framing to be brought into a debate in which the interlocutors might not have considered or been exposed to a certain frame, as national and cultural contexts influence the way frames are employed (Dimitrova & Stromback 2005). In this way, the Spanish Twitter was infused by retweets of content from outside of Spain, also an indication that Twitter users' exposure to content is not limited to political or geographic boundaries. Successful experiences with bikeshare from abroad were used to legitimize projects in far-away local debates. This was much rarer, however, in the North American context, an outcome which is difficult to explain because English is a language also common in many other parts of the world. In the United States, 96% of Tweets are in English, in Canada, 90%; Spain shows 83% of tweets in Spanish (and 8% in English); and Germany shows less than half (47%) of tweets in German (and 25 % in English) (Mocanu *et al.* 2013). Previous research has shown that the larger a twitterer's network of reciprocal following grows, the larger the average geographic distance between the network links becomes (Kwak *et al.* 2010). An initial explanation for the finding from the qualitative analysis that the Spanish case incorporated more content from geographically distant discourses while the North American case displayed less of this behavior is that the ubiquity and concentration of Twitter use in the North American case provides a broad enough diversity of issue publics and interested interlocutors that the search for similar interests need not reach as far. However, this is not yet substantiated, and further research would be necessary to learn more the types of Twitter users engaging with content on local issues and how their networks affect how, when, and where the content spreads.

It is likely that there were debates going on in all three case cultures in languages other than those captured in the corpuses for those cases. In Germany and Austria, German is the language in which policy is made and the official debates in city councils or parliaments take place in German, this does not necessarily always hold true for Spain or Canada. The political efficacy of the public sphere is likely heightened when discussions are carried out in the official policy language. The legitimacy on the other hand, may suffer.

12.   Conclusion

Since the rise of the internet, digital media, and social media networks in particular, have many expectations projected upon them, especially in terms of democratic deliberation, political engagement, and the organization of opinion and exchange in the public sphere. This research set out to analyze how communication on the corporate social media network Twitter and in print media interact and influence one another. This was carried out by analyzing 13,263 Twitter updates and print media articles, both qualitatively and quantitatively. The text items all referenced the same policy issue, that of bikesharing, and originated in three different cultural cases, the German, the North American, and the Spanish. The focus of the analysis was on the framing of the issue of bikesharing, in other words, how texts showed their support for or opposition to bikesharing by associating bikesharing with other contributions, and how this was legitimized.

The theoretical foundation of the research lies in public sphere theory, and the assumption is that in democracies it matters how issues of public interest are discussed. The public sphere is not understood as an empirical reality, but rather the concept is employed to assess in what ways empirical manifestations of imperfect public sphere arenas meet and fail to meet the normative criteria for democratic deliberation. There have been significant developments in communication technologies and practices in the past two decades which make almost constant revision of political communication theories and the application of the idea of the public sphere necessary.

12.1.   Limited Efficacy of Twitter as a Public Sphere Arena

On the one hand, there is internationalization, as was observed in this research. Topics, frames, and other content find their way into what used to be (or were assumed to be with higher certainty) national public spheres. This, however, does not imply a deterritorialization of the public sphere or an uncoupling of geography from deliberation. Policies continue to be made within polities, and in this research it was also observed that content brought into a national or cultural Twitter arena from outside was oriented to have relevance for the locality into which it came, in some cases even a direct connection was made. In this way, the global reach of internationally active corporate social media do not deemphasize the local; rather what was observed is that the global was brought into the local (as illustrated in figure 2). This development has been observed by scholars who note that few portrayals of politics remain exclusively local (Tromble & Wouters 2015) as well as others who have referred to the embedding of the local in the global (Sassen 2005, 2007). Scholars have also observed reterritorialization or relocalization processes through expanded reach of local newspapers (Skogerbo & Winsvold 2011).

On the other hand, individualization and fragmentation in media consumption practices (Prior 2007; Bimber 2014) lead to more ad-hoc, unorganized, and non-permanent forms of political participation which more often show an inclination toward the local (Dahlgren 2009). If a valorization of the local is indeed the case, it would help to explain the inclination of Twitter users to opt for obtrusive issues and issue attributes in the framing of local issues, as was observed in this research. Understanding better the role and implications of decentralized media communication with an increased relevance of citizen producers (or produsers), this research adds an in-depth analysis of what people are people are doing with media on the intersection of traditional and personalized, digital media.

To analyze a part of the puzzle regarding the implications of digitalization and social media for the public sphere, this research took a theoretical approach which accounts for the possible changes and developments in communication practices. In light of internationalization of the public sphere, Fraser (2007) proposed two vectors along which to assess contemporary public sphere arenas: legitimacy and political efficacy (explained in detail above in the section 2.1). Both of these vectors were assessed in the evaluation of the public sphere as regards its normative goals.

The assessment of the legitimacy of the public sphere on Twitter as regards the local policy option of bikesharing was carried out by identifying what actors were represented in the discussion with a focus on those who were the largest contributors. It was found that participation in this public sphere arena was closer to the normative standards of the public sphere for local and routine political issues than in extraordinary circumstances such as election campaigns. This conclusion is derived from the percentage of actors contributing to the public debate as citizens or civil society being much higher regarding bikesharing than other studies have found in election campaigning (see the actor analysis above and the discussion section 'Inclusivity of the Public Debate,' compare Harder *et al.* 2016).

More emphasis was placed on evaluating the political efficacy of the public sphere. Wolfsfeld (2011) proposed the theory that there are three steps that need to be taken to achieve a fourth step of actually impacting politics. Demonstrating that public sphere arenas impact politics would be evidence of political efficacy. Proving a causal effect from media to political decisions, however, is beyond the empirical reach of this research. Instead, this research focused on the first two steps of Wolfsfeld's (2011) outlined path to political efficacy, namely mobilizing support, and getting messages into traditional media outlets. These have been identified in other research as 'coalition-building' and 'spill-over' (Pfetsch *et al.* 2013).

It was found that Twitter as a public sphere arena showed remarkably little political efficacy in these first two steps, but that this varied between the case cultures. In the German case, it was evident that Twitter was used for mobilization, but that the discussions on Twitter were not responsible for spill-over. Print media articles on the topic of bikesharing that used similar frames to those on Twitter were found, but temporal aspects and the specific content did not indicate any likelihood that the print media articles in question were a result of Twitter activity. The North American case did display political efficacy, and even in some cases high levels of mobilization (or coalition-building, unification around a master frame). In isolated cases, frames and issues were also found to have spilled over from Twitter into print media, but these were rare and not sustained over time. In the Spanish case, attempts at mobilization were observed at best, but this did not lead to unification behind a common frame or issue. The Spanish case did not display any spill-over from Twitter to print media.

In all three cases however, there were plenty of examples of spill-over from print media into Twitter. This occurred in various ways, the most common being tweets including links to internet print media content. There were also examples in every case of print media actors themselves tweeting their content into the twittersphere, as well as tweets that were pre-formulated and fabricated which twitterers could tweet in their own name by clicking the Twitter button next to an article on print media websites.

The main argument resulting from this research is that corporate social media such as Twitter can provide a public sphere arena for public debate of local policy issues such as bikesharing, and that while the legitimacy of this arena may be slightly better than when handling more sensational or "higher" political issues, the efficacy is quite limited. The findings support the theory that social media can help with coalition-building and mobilization around issues, but have only a limited ability to lead traditional media to adopt issues and framings when it comes to locally-oriented debate.

This means that for the first step toward impacting politics, social media as a public sphere arena can be helpful for mobilization and coalition-building. Seen this way, this research also supports theories that the potential for online political participation is more than simply the dilution of politically meaningful and engaged citizenship (Schlozman *et al.* 2013) or slacktivism (Morozov 2011), as has also cautiously been shown in reviewing the bulk of the scholarship (Boulianne 2015). This finding, however, is for the use of social media for non-sensational local political issues, and further research is necessary to identify exactly in what areas social media does provide an arena for politically meaningful participation, and where it does not.

To specify, according to Theocharis' (2015) definition of digitally networked participation, all case cultures displayed acts of participation on Twitter. The efficacy of Twitter as a public sphere for routine local political issues must be approached with care in light of the results of the study. Nonetheless, *digitally networked participation* is defined as "a networked media-based personalised action that is carried out by individual citizens with the intent to activate their social networks in order to raise awareness about, or exert social and political pressure for the solution of, a social or political problem" (Theocharis 2015:194), which is certainly present in all of the cases. Seen this way, this study would reveal Twitter as a hotbed of digitally networked participation, because the definition focuses on the intent, and does not concern itself with the efficacy of the act or legitimacy of the medium. In this way, one part of the argument derived from this research is that Twitter, in all of three case cultures, is an arena for acts of politically-oriented participation, even if the efficacy of the acts observed here has been minimal or non-existent.

12.2.   Broader Implications

At a fundamental level, this study confirms that not only traditional media, but also social media production and usage patterns vary according to cultural and political contexts. The ways in which social media is used, as this study shows, differ between contexts. For traditional media, this has been thoroughly examined, substantiated, and characterized (Pfetsch 2001; Hallin & Mancini 2004, eds. Hallin & Mancini 2012; ed. Pfetsch 2014). But for social media, while there are beginnings of a research body of comparative approaches (Mocanu *et al.* 2013; Barbera 2015; Nielsen 2015), it much less developed and many unanswered questions remain.

In the German case, Twitter was found to be used overall the least of the three cases for debate and discussion of bikesharing. It is inferred from the empirical observations of this study in combination with existing theory that there are alternative channels for influencing traditional media coverage and policy outcomes related to bikesharing and local politics which exist aside from and are not dependent on social media (see the 'Framing across Cultures' section of the Discussion). Twitter was observed to be used the most for discussing bikesharing and related issues in the North American case. Twitter usership is higher in North America than in the other two cases, but this does alone not account for the large difference in the volume of the Twitter debate to the other two cases. In spite of high usership and sustained framing of the issue of bikesharing on Twitter which did not match that of print media, only very limited spill-over was found in the North American case. The Spanish case did not sustain alternative frames to the print media, and there was no spill-over from Twitter to print media found in that case.

Though the data used in this study do not allow determination of exactly where the tweets were sent from, the large urban centers were disproportionally represented in the localities referenced on Twitter. While this was also the case for print media, it was less extreme and smaller towns and villages were also covered. The relative neglect of smaller towns and municipalities on Twitter in spite of the coverage of these places in the print media suggests that Twitter is used less for discourse of issues where localities are less densely populated. This may indicate that Twitter is a public sphere arena not used for debates on local issues applying to rural municipalities or smaller towns.

As observed with the economic frame across all cases, and the environmental frame in the North American cases, the tendency of the Twitter content was to not produce or reproduce the non-obtrusive aspects of framing that were found in the print media corpus. The implications of this for the future of communication practices may be that if the shift towards personalized communication and content produced by masses of produsers (Bruns 2007) continues to gain in relative significance, it could mean that non-obtrusive issues are given less emphasis and attention, and possibly even that the applicability of non-obtrusive issues or issue-attributes lose relevance as legitimation or justification tools. Communication practices in a situation of increasing individualization (Chaffee & Metzger 2001) and personalization (Bennett & Segerberg 2012; Gordon, Baldwin-Philippi & Balestra 2013) may develop in a direction that values obtrusive issues over the non-obtrusive, especially on personalized social media such as Twitter. Communicating non-obtrusive and abstract issues like global warming combined with psychological decision-making patterns such as future discounting already present major challenges for communicating environmentally-oriented policy measures (Antilla 2005; Boykoff 2011). A deemphasizing of non-obtrusive issues and issue-attributes against this backdrop could carry immense implications for the way politics are communicated on all mediums. Future research in this area would be important for understanding the broader implications of personalization of media for political communication.

If international corporate social media continues to rise, the implication is that a fusion or overlap of linguistically-aligned public spheres is likely, making formal national and polity borders less influential on the make-up of the public sphere. This also carries with it the complication of to whom or to what the public sphere is addressed, and who the responsible actors are. It is already a complicated task to identify purviews of responsibility, and further research would be necessary to examine how this affects the make-up of the public sphere as well as what institutions or actors are implicated in public sphere deliberations.

For local public spheres as arenas for issues of political concern that – like bikesharing – are in many respects matters of concern first and foremost for those who are part of or familiar with the locality.

Choices of responsible actors such as local governments or their agents regarding what public sphere arenas to observe may determine which form public deliberations take on. By participating in a certain public sphere arena, or reacting to deliberative processes coming out of a certain public sphere arena, authorities promote further activity in that arena or along that channel.

Evidence of such promotion of further activity by the responsible decision-making actors is shown in the difference between the Twitter activity between the three cases. In the North American case, where responsible decision-makers have engaged and acknowledged actors and established channels for input on the issue of bikesharing, Twitter activity was highest. In the German case, where Twitter activity was the lowest, the structure for debate and communication for the issue area was brought into existence and maintained by the participating actors before Twitter came into existence (see Schwedes 2011 for an outline of these structures). The result is that the issue was recognized as an issue that falls into the purview of established actor constellations and processes, which in and of themselves offer opportunities for citizen input, which is bundled and sent along established channels directly to political decision-makers and traditional media outlets. Even so, issues that are perceived as more sensational, disruptive, or less technical in nature are still likely to burst out of these established channels, which can lead to the establishment of alternate public sphere arenas.

In the North American case, the political system did not display such established channels and actor constellations, and the tendency toward this type of communicative structure is weaker than in the German case (Lijphart 2012). Twitter use is generally used more in the North American countries than in the countries of the other two cases (Leetaru *et al.* 2013), but this does not account for such a great variation in levels of activity as was observed in this study. Two further factors can explain the manifold greater use of Twitter as a public sphere arena as regards the issue of bikesharing. First, the culture was less prepared with established actors able to accept and steer the debate, as cycling as a practice is more marginalized than in the German case (Ebert 2010; Cox 2015a; Longhurst 2015), and bikesharing has a more recent history than in the Spanish case (Anaya & Castro 2012). Second, the responsible decision-makers and their agents display an interest in and accept Twitter as a communication channel (Ellison & Hardey 2013). This was observed in the Twitter corpus in the responsiveness and high level of activity on the part of bikeshare operators, but also city and municipal officials' activity in communication about the issue on Twitter. This in and of itself is a signal that Twitter is an appropriate arena for these deliberations.

In the Spanish case, there was next to no evidence of responsible authorities and decision-makers taking part in or otherwise acknowledging deliberations on social media regarding bikesharing. The issue was

presented in the print media as a technical solution not only to mobility problems, but also to environmental and economic problems. The actor constellations that determined the debate in the print media were largely political elites, politicians and civil servants; the issue was presented as a technical solution which had already been decided upon, reflecting political parallelism and elite-orientation which can be expected in a polarized pluralist mass media system (Hallin & Mancini 2004). There was criticism found in the Spanish Twitter corpus, but nothing approaching organized opposition or an organized effort for revision. The lack of efficacy in terms of mobilization and spill-over confirms the hypothesis of Pfetsch *et al.* (2013) that technical issues will not succeed in gaining politically effective dimensions on social media platforms.

The three case cultures in this study displayed three different types of use for Twitter as a public sphere arena. In the German case, Twitter was largely not used for discussion of bikesharing and the little activity there reflected print media or Twitter was used as an announcement platform. In the North American case, Twitter was an arena which was extensively used by various actors to assert their meaning of bikesharing; the framing of the print media was not completely accepted, and alternative framings were pursued and promoted. In the Spanish case the content on Twitter largely accepted the framing of the print media and, as it was presented as a technical issue, the critique focused on smaller and technical details, but not the broader meaning of bikesharing.

Just as traditional media vary as a result of cultural and political contexts, social media such as Twitter is also shaped and determined by cultural and political idiosyncrasies. Communication practices are not a blank slate for which use is determined by the inherent structure of media technology developments. Rather, media technologies are used in different ways and to different ends depending on how social actors attribute them their place and relevance.

12.3.   Research contribution

To date, there is still relatively little comparative research on media systems focusing on the use of social media as it relates to traditional media systems. This research has furthered the current knowledge on how social media and traditional media influence and interact with one another. Further, it has filled research gaps in two important directions. First, it has addressed how frames on social media differ from frames on mass media, and is at the time of writing the only study that addresses this question across three different cases. Second, it has gone beyond previous research in this field (Qin 2015) to not only evaluate salience and selection of framing devices between social media and traditional media, but to also compare these in different media and political contexts.

Furthermore, there is to date little research on the relevance and role of social media in the coverage and deliberation of local and routine political issues. This has until now been neglected in the research agenda, as the work done thus far has, with few exceptions, focused extraordinary political issues, and issues at the national level.

Finally, research on the communication of mobility politics has thus far been concentrated almost exclusively on traditional media. This research has begun to fill this gap, but much work remains. The implications of mobility politics are of major importance to social organization and democratic processes. In the public sphere debates around mobility politics is where the mobilities of individuals, materials, and ideas come together. The way we talk about mobility and mobilities will determine how we practice, promote, and regulate them. Digitalization, as has been established, impacts the way in which content can enter the public sphere, and thereby impacts what content, and from whom, becomes admissible to the public sphere.

12.4.   Limitations and Further Research

The observations from this research are limited to the texts used to carry out the empirical analyses. This research fully accounted for only one dimension of communication, the textual manifestation of print media and Twitter messages, the composition and reception of the messages is beyond the empirical reach of this study, so anything beyond that which can be found in the print media and Twitter corpuses as textual content can only be inferred. This leads to a limitation in the explanatory value of the relative importance of certain text items to others in terms of their reach or readership, or of their relative importance compared to other communication acts not observed in this study. While the methodology accounted for some aspects of reach by including virtually identical print media articles appearing in different news outlets, it was not possible to weight text items depending on their circulation. Retweets were accounted for when the Tweet was retweeted within the geographic limitations of the case culture, but further data regarding the amount of views, clicks or likes of tweets was unavailable. A similar study which captures more of these data dimensions on circulation or reach would enrich the explanatory value of such analyses.

Another limitation was the time period of the data collection. A longer data collection period would allow more robust insights as to the interactions of frames between mediums. This could also enable an assessment of long-term trends which was beyond the reach of the data used for this study which covered a roughly five-month (22 week) period. Automated content analysis enabled through text-mining procedures could allow for far longer time periods to be analyzed (Grimmer & Stewart 2013).

This research project only included two mediums, print media and Twitter. An expansion of the approach to include fringe or niche media outlets, and also blogs and other internet platforms such as YouTube could enable a deeper analysis. In some instances during this research, links and references to a 'middle layer' of media (which also included blogs or magazines produced by organizations whose newspaper output was contained in the print media corpus) were made, but they were not captured in the quantitative analysis, and only in some instances for the qualitative analysis. Nonetheless, it became apparent that this middle layer of media was important, especially serving as a way to anchor concepts, ideas, and debates on Twitter. It is likely that this middle layer of media, which was not captured thoroughly in this research, plays an important role in spill-over processes between social and traditional media.

Research which could classify and categorize the content that makes up this middle layer, which is represents a public sphere arena, has already begun. Understanding more about the interaction of the plethora of public sphere arenas would be important for more thorough evaluations of legitimacy and efficacy. Systematic approaches to studying these interactions have been proposed (Maier *et al.* 2017), and will play an important role in understanding public spheres in a hybrid media context.

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Appendix

Appendix 1: Print News/Mass Media Corpus Content

The corpus of print media content was put from the content available from the LexisNexis database and supplemented with content from the database Factiva. It was not possible to access all of the 25 most widely circulated newspapers for each country. In the case that a source was not accessible, it is noted in the column 'notes.' Sources are considered accessible if either published or online content (or both) was available through the databases. More news sources than just those listed in these top 25 lists are included in the corpus, according what is available through the databases (please refer to LexisNexis and Factiva for full lists of their news archives).

Information on circulation was collected from diverse country-specific sources, the methodology may therefore vary.

Germany

Rank	Name of Newspaper	Notes
1	**Bild** (ü)	
2	Die Zeit	Weekly newspaper. 2nd highest number of copies sold, but per week, not day.
2	**Süddeutsche Zeitung** (ü)	
3	**Westdeutsche Allgemeine Zeitung**	
4	**Rheinische Post**	
5	**Frankfurter Allgemeine Zeitung** (ü)	
6	**Südwest-Presse**	
7	**Freie Presse**	*Not included, not available via Databases
8	**Sächsische Zeitung**	
9	**Neue Westfälische**	
10	**Rheinpfalz, Die**	
11	**Kölner Stadt-Anzeiger**	
12	**Augsburger Allgemeine**	
13	**Hessische/Niedersächsische Allgemeine**	
14	**Hamburger Abendblatt**	
15	**Leipziger Volkszeitung**	
16	**Rhein-Zeitung**	
17	**Münchner Merkur**	
18	**Mitteldeutsche Zeitung**	
19	**Magdeburger Volksstimme**	
20	**Welt, Die** (ü)	

21	**Schwäbische Zeitung**	
22	**Passauer Neue Presse**	
23	**Thüringer Allgemeine**	
24	**Neue Osnabrücker Zeitung**	*Not included, not available via Databases
25	**Weser-Kurier**	

Data on ranking from IVW via media.de; based on first quarter 2014 (http://meedia.de/2014/04/23/die-ivw-analyse-der-ueberregionalen-und-regionalen-zeitungen/)

Spain

Rank	Title	Notes
1	El País	
2	El Mundo	
3	La Vanguardia	
4	ABC	
5	El Periódico de Catalunya	
6	La Razón	*Not included, not available via Databases
7	El Correo	
8	La Voz de Galicia	
9	El Diario Vasco	
10	La Nueva España	
11	Heraldo de Aragón	*Not included, not available via Databases
12	Diario de Navarra	*Not included, not available via Databases
13	Faro de Vigo	
14	El Diario Montañés	
15	Última Hora	*Not included, not available via Databases
16	El Punt Avui	
17	Levante	*Not included, not available via Databases
18	El Norte de Castilla	
19	Ideal	
20	Las Provincias	
21	La Verdad	
22	Sur	
23	El Comercio	
24	Informacion	
25	La Provincia	

Data on ranking from OJD (Oficina de Justificación de la Difusión), numbers based on the year 2014: http://www.introl.es/medios-controlados/

United States

Rank	Title	Notes
1	Wall Street Journal	
2	New York Times	
3	USA Today	
4	Los Angeles Times	
5	New York Daily News	
6	New York Post	
7	Washington Post	
8	Chicago Sun-Times	
9	Denver Post	
10	Chicago Tribune	
11	Dallas Morning News	
12	Newsday	
13	Houston Chronicle	
14	Orange County Register	
15	Newark Star-Ledger	
16	Tampa Bay Times	
17	Cleveland Plain Dealer	With associated online site cleveland.com (Newspaper Name and Website name are not identical)
18	Philadelphia Inquirer	
19	Minneapolis Star Tribune	
20	Arizona Republic	
21	Honolulu Star-Advertiser	
22	Las Vegas Review-Journal	
23	San Diego Union-Tribune	
24	Boston Globe	
25	Atlanta Journal-Constitution	

Data on ranking from Alliance for Audited Media, based on the year 2013:
http://auditedmedia.com/news/blog/top-25-us-newspapers-for-march-2013.aspx

Appendix 2: Search Parameters for Corpus Creation and Codebook

LexisNexis, Factiva, and Twitter Stream API Parameters:
The following search terms were used for the creation of the text corpuses.

	Print media databases: LexisNexis and Factiva	Twitter: Twitter stream API using Tweet Archivist
German Case	leihfahrräder OR leihräder OR leihradsystem	leihfahrräder OR leihräder
North American Case	bikeshare OR bikesharing OR bike-share OR bike-sharing	bikeshare OR bikesharing
Spanish Case	"bicis publicas" OR "bicicletas publicas"	"bicis publicas" OR "bicicletas publicas"

For the print media corpus, the date range was set from Date Range: Oct. 12th, 2014 – March 13th 2015. The Region was set to the main country of that case (Germany for the German case, the United States for the North American case, Spain for the Spanish case).

For the Twitter corpus, the Tweet Archivist application was programmed to carry out a search via the Twitter Stream API and archive any new results every five minutes. The results for the date range of Oct. 12th, 2014 – March 13th 2015 were then used to create the corpus.

The content of the corpuses can be provided by the author upon request.

Codebook:

Frames	
Mobility:	This code is applied to an item if the considerations associated with bikesharing are mainly of a transport nature. Articles coded with this code connect bikesharing with concepts like transit, transport, travel, trips, mobility, movement of people, getting around, distance, commuting, etc. Thus when claims are made that bikesharing has an effect on mobility, be it positive or negative, also indirectly, this code should be applied. <u>Tweet Specification</u>: If a tweet refers to specific locations, that are [not] available for bikeshare rental/return, this is considered mobility. This is because it directly has to do with the concepts of transport or 'getting around', and is thus linked to mobility options/preferences/desires.
Health/Safety:	This code is applied to an item if the considerations associated with bikesharing are principally related to health and safety. This code refers to two main concept groups, which are often but not always related: health and safety. Items coded with the *Health/Safety* code are those that connect bikesharing with health related concepts (such as physical health, exercise, calories, weight loss/gain, obesity, fitness.), and safety related concepts (such as injury, protection, [traffic] accidents, death, physical risk and harm.). Examples of instances where the *Health/Safety* code is applied are when public health is considered as being affected by bikesharing, or when traffic accidents or changes in accident rates are attributed to bikesharing. When bikesharing is portrayed as having an effect on health and safety issues, this code will be applied.
Economic:	This code is applied to an item if the considerations associated with bikesharing are mainly of an economic nature. Articles to which this code is applied connect bikesharing to economic concepts such as budgets, taxes, [public] finance, sponsorship, money, revenue, financial [in]dependence, economic success/failure. This code is applied when the item refers to economic concepts when talking about bikesharing. This may take the form of discussing how bikeshares should be paid for and by whom, how the money will be raised for such a project, financial viability of bikesharing, costs associated with bikesharing, and similar or related considerations are brought up together with, or linked to bikesharing.
Environment:	This code is applied to an item if the considerations associated with bikesharing are of an environmental nature. When bikesharing is brought up or referred to in conjunction with claims about environmental changes or impacts, this code will be applied. The environmental discourse is centered on climate change and more local environmental processes of change, and when these discourses interact with the concept of bikesharing, this code is appropriate. This will often, but not exclusively take the form of statements containing claims that bikeshare impacts or has the potential to impact the environment. Thus, items with this code will often include terms such as emissions, environment, climate change, carbon, pollution, green measures, and sustainability.

Social/Community:	This code is applied to an item if the considerations associated with bikesharing are those regarding social equality and community oriented goals. In this case bikesharing is connected with ideas of rising or sinking social equality or creating higher or lower quality communities. Here, bikeshare will be connected with concepts such as fairness, openness, social cohesion, social welfare, community building, social justice, and equality. When bikesharing is mentioned as impacting the social fabric within or between communities or social groups, this frame is applied.
Unclear:	This code is applied to an item if it is not possible to determine what frame is being used, i.e. what considerations are being connected with bikesharing. This code is to be used if there are considerations which are connected to bikesharing, but it is impossible to decipher what they are or why they are associate with bikesharing. If there is no connection to political or social organization, this frame is also applied. (For example if the statement is: "Bikeshare is cuter with Kittens," no considerations relating to social or political organization can be applied, and thus the 'unclear' frame code is applied.)
Other Frame:	This code is applied to an item if there are clear considerations being connected with the concept of bikesharing, but they do not fall into one of the other *Frame* coding categories.
Functional *(Tweet only):*	This code is applied to a tweet if the tweet serves mainly as a direct mode of communication between 2 parties (one of which may also be the public), to express a wish, opinion, issue a warning, inform of specific problems or situations, solicit feedback, etc. The *functional* code is indicative of communication revolving around specific, often isolated situations, which are not of a deliberative or public opinion-forming character.

Evaluations	
Positive:	This code is applied to an item if there is a clear and direct positive evaluation of bikesharing as a concept, one or many particular bikesharing schemes, and/or of decisions or policies that aim to implement or continue a bikesharing program. This can be in the form of the author or a reference expressing positive sentiments about bikesharing and/or approving of bikesharing or its directly related results as a policy option. This code is also applied to an item if there is a clear positive evaluation of bikesharing, its implications, or other outcomes resulting from bikesharing as a concept or specific program. This can take the form of praise, or implications that the bad resulting from bikesharing does not outweigh the good, or simply focusing on the good implications of bikesharing. The positive evaluation also entails things that are positive connected with bikesharing. For example when bikesharing is described as successful, when tweets speak positively of bikesharing, or when bikesharing as a phenomenon or specific program is shown to be 'winning,' i.e. gaining usership from other forms of mobility, etc.
Negative:	This code is applied to an item if there is a clear and direct negative evaluation of bikesharing as a concept, one or many particular bikesharing schemes, and/or of decisions or policies that aim to implement or continue a bikesharing program. This can be in the form of the author or a reference expressing negative sentiments about bikesharing and/or approving of bikesharing or its directly related results, or attributing responsibility for negative outcomes to bikesharing policies or schemes. This code is also applied to an item if there is a clear negative evaluation of bikesharing, its implications, or other outcomes resulting from bikesharing as a concept or specific program. This can take the form of critique, or implications that the good resulting from bikesharing does not outweigh the bad, or simply focusing on the bad.
Ambivalent:	This code is applied to a text item if there is are both clear and direct positive and negative evaluations of bikesharing (see above codes) within the text. This code is only applied when there is not one evaluation which is stronger than the other, meaning that there is roughly equal emphasis, argumentation, and content supporting both evaluations.
Unclear:	This code is applied to a text item if it is not possible to determine if or whether there is an evaluation of bikesharing. Thus, only if no direct evaluations or evaluations through considerations attributed to bikesharing as a concept, concrete program, policy, or practice can be discerned should this evaluation be applied.

Appendix 3: Agreement Statistics

	Agreement	Krippendorff's Alpha	Number of Agreements	Number of Disagreements	Number of Cases	Number of Decisions
Evaluation	89.7%	0.817	148	17	165	330
Economic Frame	96.4%	0.793	159	6	165	330
Environmental Frame	98.8%	0.851	163	2	165	330
Health/Safety Frame	97.6%	0.738	161	4	165	330
Mobility Frame	87.9%	0.723	145	20	165	330
Social/Community Frame	95.2%	0.724	157	8	165	330
Frame Unclear	99.4%	0.665	164	1	165	330
Other Frame	86.7%	0.720	143	22	165	330
Functional	95.4%	0.823	124	6	130	260

Coder number one: Dirk von Schneidemesser
Coder number two: Alexes Flevotomas

Appendix 4: Evaluations and Frames in Text Items (absolute numbers)

Case/Medium	Positive	Negative	Ambivalent	Unclear Evaluation	Total Text Items of Case/Medium	% of Total Text Items (n=13,263)
All Cases (All Texts)	*5824*	*459*	*314*	*6666*	*<u>13263</u>*	*100.0%*
All Cases/Print	*478*	*48*	*58*	*94*	*678*	*5.1%*
All Cases/Twitter	*5346*	*411*	*256*	*6572*	*12585*	*94.9%*
German (All Texts)	**172**	**10**	**38**	**79**	**<u>299</u>**	2.3%
German/Print	129	7	34	15	185	1.4%
German/Twitter	43	3	4	64	114	0.9%
N.America (All Texts)	**5365**	**390**	**258**	**6331**	**<u>12344</u>**	93.1%
N. America/Print	267	32	12	75	386	2.9%
N. America/Twitter	5098	358	246	6256	11958	90.2%
Spanish (All Texts)	**287**	**59**	**18**	**256**	**<u>620</u>**	4.7%
Spanish/Print	82	9	12	4	107	0.8%
Spanish/Twitter	205	50	6	252	513	3.9%

Evaluation of Text Items, absolute numbers

Case/Medium	Economic	Environment	Health/ Safety	Mobility	Social/ Community	Other Frame	Frame Unclear	Functional	Total Frames by Case/Medium
All Cases/All Texts	*840*	*292*	*434*	*2476*	*646*	*7591*	*57*	*1196*	*<u>13532</u>*
All Cases/Print	*186*	*77*	*31*	*368*	*18*	*63*	*28*	*0*	*771*
All Cases/Twitter	*654*	*215*	*403*	*2108*	*628*	*7528*	*29*	*1196*	*12761*
German/All Texts	**53**	**7**	**0**	**175**	**1**	**68**	**0**	**9**	**<u>313</u>**
German/Print	43	4	0	132	1	15	0	0	195
German/Twitter	10	3	0	43	0	53	0	9	118
N. America/All Texts	**664**	**243**	**424**	**2185**	**636**	**7196**	**56**	**1170**	**<u>12574</u>**
N. America/Print	122	51	26	186	14	26	27	0	452
N. America/Twitter	542	192	398	1999	622	7170	29	1170	12122
Spanish/All Texts	**123**	**42**	**10**	**116**	**9**	**327**	**1**	**17**	**<u>645</u>**
Spanish/Print	21	22	5	50	3	22	1	0	124
Spanish/Twitter	102	20	5	66	6	305	0	17	521

Frames in Text Items, absolute numbers

*Number of Frames may not equal number of text items as more than one frame can be applied to a single text item.