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Beyond Filter Bubbles and Echo Chambers

The Integrative Potential of the Internet

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1 Introduction

Media are deeply engrained in people's lives, from thoughtless everyday routines to lifelong socialization. This leads researchers and policy makers to assume that media have integrative potential: They provide topics to talk about with others, make aspects of reality accessible that reach far beyond an individual's zone of personal experiences, and help teach norms and values to the members of a given society. These roles can be fulfilled by different kinds of media, but when talking about the integrative potentials, functions, or effects of media, it is often media with which people spend a lot of time that come into focus. For the general population (and a large part of scholarly literature), this is usually television, while for certain social groups, like fan groups or cliques, more special-interest media may be important to build and maintain social cohesion. Subsequently, the concept of integration spans a wide variety of areas in communication and media research.

The rise of online communication has led to the question of the integrative potential of media being asked again, in particular focusing on a *lack* of integrative potential. Online communication differs from mass media in a variety of ways, more for some platforms, less for others; and in different areas, online media have replaced traditional outlets of mass communication. A number of scholars have expressed concerns about a loss of social cohesion and a more pronounced fragmentation of media use, in particular with regard to societies in which online media use becomes the norm. While traditional media have also been accused of being detrimental for societal integration via fragmentation (before online media, this was most frequently discussed for multichannel television) and fears about new media are by no stretch a new phenomenon (Butsch, 2011; Keuneke, 2011), the advent of the online era warrants a new and more encompassing look at this issue. Three features of online media are important when thinking about the integrative potential of the Internet, which have so far often been discussed separately: Online offerings are usually not linear, but used via hyperlinks, which offer many more opportunities to customize media intakes. The amount of content available online is also much larger than via traditional mass media, with potentially more possibilities to select like-minded messages and ignore more

challenging ones. And lastly, the underlying algorithms of online platforms may present users with “more of the same,” rather than a diverse set of messages, without the users even being aware of it.

Of course, not all communication researchers agree with this pessimistic view of the integrative potential of the Internet. Webster and Ksiazek (2012), for instance, look at repertoires of media users for TV channels and websites and come to a more positive conclusion. They show that even with a wide variety of media outlets at their disposal, people still use mainstream, middle-of-the-road media too, and audiences for media thus continue to overlap largely, even for online platforms. Webster and Ksiazek’s study and Webster’s (2014) subsequent broader discussion of audience attention in the online era have been very inspirational for the present work. The scholars find patterns of overlap in the usage repertoires of television and websites and thus conclude that a loss of social integration due to audience fragmentation is currently not to be feared. While their approach is innovative and constitutes a welcome antipole to the negative predictions of others, it also has its limitations—as every study does, the present one included. Webster and Ksiazek, for instance, only consider overlap on the aggregate level of audiences, not individual users. Differences between users or types of users may thus be overlooked. Nor do the scholars consider what people actually view on a television channel or website, yet the amount of content available on both types of media monthly is enormous, and fears about a lack of integrative potential can hardly be dispelled by users coming across the same platform within one month.

The present study tries to address these limitations by combining different methods in three substudies. First, a survey looks at people’s more or less online-based media use, relationships between choice of media, awareness of media content, and integrative status. This should allow the integrative potential of the Internet as well as older media to be assessed comparatively. Second, the use of two popular online platforms is analyzed via clickstream data, which capture the variety of online usage patterns in much more detail than self-reports in a survey. Third, Webster’s (2011, 2014) discussion of user behavior, or in more abstract terms, their agency, versus the structures of media outlets they encounter, has inspired a content analysis of the items available on the two platforms in order to compare it to usage. The opening comparative assessment of the integrative potential of the Internet will thus be complemented by more detailed, albeit exemplary, studies of online use and online content.

The three parts of the study have developed over time from the initial idea of examining the integrative potential of the Internet. It became clear early on that a combination of methods would be necessary to capture the different dimensions in which online outlets and usage differ from traditional mass media and in which this may thus result in different effects, positive or negative, on the integration of individuals and societies. Of course, each method and respective substudy has its own limitations, but the juxtaposition of different methods should alleviate some of these shortcomings.

Overall, the study examines the integrative potential of the Internet from the vantage point of audience research and media use. It thus focuses on the micro or individual level, rather than, for instance, the meso level of social institutions and organizations or the macro level of society as a whole. This means that these higher levels of social integration will not be discussed extensively. However, individual behavior on the micro level forms the basis for any beneficial or detrimental effects of the Internet to be observed for society in general. It could even be argued that some of the more pessimistic visions for a fragmented online society derive from neglecting the individual level and focusing merely on the macro level. This study is thus also intended to counter such approaches by considering the patterns and effects of media use by individuals in their everyday life.

The study examines the integrative potential of the Internet using data from Germany. Some of the presented findings will thus be merely exemplary for this country, its inhabitants, and media landscape. However, in many ways Germany is comparable to other Western countries with regard to the structures of its society as well as media system, and it is hoped that the results may be useful for future studies in other contexts.

The focus on Germany also entails a wider perspective on integration, fragmentation, and media than in many other studies. The German- and English-language literatures on these concepts have developed different traditions of definitions, research questions, and empirical approaches. This is, for instance, partly due to the strong position of public-service broadcasting in Germany and its mandate to provide a basic service for the entire population, including information, entertainment, culture, and education. The present study tries to bridge some of the resulting gaps between the German and international perspectives within the research field.

Likewise, research on the use and effects of the Internet spans a variety of disciplines. Within communication research, existing research traditions for media such as television and its potentially fragmentizing effects have been extended to the digital realm, while other areas, e.g., marketing, psychology, information science, and computer science, contribute to the topic from very different theoretical and methodological backgrounds. While the theoretical basis of the present study is clearly located within communication research and a social-science tradition (with a strong focus on audience research), findings from other fields prove to be informative for existing gaps in the communication literature, and an interdisciplinary approach is thus followed in order to arrive at the most fruitful research questions and study designs.

The study is organized in the following manner: Chapters 2 to 4 develop the theoretical framework of the study. The integrative functions of media are introduced (Chapter 2), before describing assumptions about the alleged lack of integrative potential of the Internet alluded to above (Chapter 3). Chapter 4 provides a more systematic look at how the central concept of social integration has been measured across different research traditions. Based on this literature review, open questions as well as the aim and scope of the overall study are explicated in more detail in Chapter 5. Given their different foci and methods, the three substudies are presented in each of the following chapters, where more detailed research questions for each substudy are also introduced. As the three studies build on each other, each of the three empirical Chapters 6 through 8 ends with a summary and discussion of the results, and Chapters 7 and 8 contain additional theoretical background not covered in the general theoretical introduction. Chapter 9 provides an overall discussion of the findings and limitations of the present work as well as an outlook on questions left for future research into the integrative potential of the Internet.

2 A brief overview of the integrative functions of media

Integration is a central concept in the social sciences, and its relationship to mass media has been discussed in numerous fields of research (McQuail, 2005; Trebbe, 2009). Following Lockwood's (1964/1991) classic distinction between social integration and system integration, this study focuses on social integration, i.e., the relationships between the individual actors in a social system. A more detailed discussion of the meaning of social integration will be provided in section 2.4; for the purposes of this introduction, the following working definition will suffice: Social integration denotes the state or process of building connections between individuals and social groups. This cohesion entails functional interaction on the one hand, but also psychological attachment or identification with a group on the other. Individuals are embedded in diverse social contexts, and the media can play a variety of roles in supporting integration on these different levels. Vlašić (2004) summarizes the integrative functions of media into five dimensions, which will provide further orientation about the forms of social integration analyzed in the present study: On the first and micro level, mass media provide people with topics for everyday conversations, which facilitates social contact and provides people with a shared base of knowledge. While conversational topics can be volatile, media content also has more long-term functions. They will inevitably present a selection of potential topics (referencing people, institutions, or events), and thus, in a second step, represent parts of the social reality. These representations provide media users with a sense of what or who is relevant or important. This function is closely connected to a third dimension: Media are instrumental for creating a public sphere in which pressing societal issues as well as solutions proposed by different actors can be discussed. A functioning public sphere is of course necessary for a democratic system in which voters should be able to elect the parties or candidates that they see as most suitable to govern in their name. Aspects of social reality that are not covered by the media are less likely to be discussed in the public sphere, which creates the aforementioned interaction

between representation and the emergence of a public sphere. As a fourth, still more macro dimension, Vlašić describes the media's contributions to displaying norms and values of a given society. Norms and values are acquired through life-long socialization, and media offer numerous messages that present normative or non-normative behaviors and also show how these are sanctioned in social situations. Compared to primary (close family) and secondary instances of socialization (educational institutions), media can cover a particularly wide range of norms, values, and behaviors. By making these available to very large audiences, the media contribute to socialization on a mass level. Lastly, Vlašić addresses the more abstract constructions of social reality that media present to their users. Through embedding events or actors in meaningful narratives, the media present tales of reality (for example, of cause and effect), and they make it possible for society to observe itself as well as other societies. As the presented images are of course constructed, they can be distorted in many ways, leaving out certain aspects or over-emphasizing others. But these mediated images are cumulated over time and shared by large audiences over long periods. They are therefore powerful in providing a shared understanding of the outside world to society as a whole.

This study focuses on the lower levels of Vlašić's model, the micro level of the individual. To begin with, the model is hierarchical, with the lower levels being a prerequisite for the realization of integrative effects on more-advanced levels. At the same time, the level of everyday interaction between people, media, and mediated representations of reality deserves close scrutiny and is easier to analyze empirically than life-long and/or society-wide processes of integration, for which innumerable secondary sources of influence would have to be considered as well. The relevance of such higher or macro levels of integration is, however, an important part in explaining the interest in the more micro levels. And as stated above, lower levels of integration form the basis for the more macro levels.

This chapter introduces three different features of media that are seen as beneficial for social integration (section 2.1), before discussing findings for integrative media effects on different levels of society (section 2.2). Given its prominence in the pertinent literature, section 2.3 summarizes concerns about a potential loss of social integration due to a possible fragmentation of the television audience.

2.1 What makes media integrative

A number of facets can be derived from Vlašić's (2004) model that explain why media can serve integrative functions and thus have integrative potential. This has to do with different types of media content and with their technical ability to reach large groups of people (in contrast to media of interpersonal communication).

2.1.1 *Media reach large audiences*

That media can reach large audiences is rather straightforward at first glance: A medium that can be received by large groups of people can directly affect this mass audience. A certain reach is thus necessary to assume any integrative effects of media—beyond purely interpersonal bonding. A media event, for instance an international sports competition, is usually consumed live via television or streaming, even if tapings or rebroadcasts are available later. Such broadcasts create shared experiences for large groups of people, sometimes even considerable parts of a society (Dayan & Katz, 1992; E. Katz & Liebes, 2007). Even if the individual viewers may interpret or evaluate the respective programs differently, they are still united by engaging in the same activity and receiving the same content. For especially attractive events, public screenings in addition sometimes draw tens of thousands of viewers to one square or park, which underlines the pleasure at least some people derive from following an event as a member of a crowd (Gscheidle & Kessler, 2012; McQuire, 2010; Rowe & Baker, 2012).

Such media events can heighten feelings of attachment, e.g., to a sports team, or pride of one's country partly because of the live media coverage. Likewise, in moments of national crisis, such as terrorist attacks or natural disasters (E. Katz & Liebes, 2007), many people are not directly affected, but partly through media coverage may experience, for instance, grief, compassion, or a desire to help. Such exceptional events cannot be conceived of today without mass media, but it would be difficult to accurately measure the effect that such media events have in bringing the members of a society closer together (and to separate the media effect from that of the event itself). It is probably not a question of a single broadcast, but rather of the media being an integral part of social reality, as well as socialization processes, as Vlašić (2004) describes it for the macro level.

From the point of view of the individual, on the micro level, the degree to which people feel attached to or moved by a media event depends on many factors, of which their media use is only one. Their interest about or involvement in an issue or event, their social surroundings, personality, and many other aspects play a part in how people are affected by media events or how they interpret such (Couldry, Hepp, & Krotz, 2009; Dayan & Katz, 1992). If these factors are controlled for, it becomes possible to discern the importance of media use behavior or other media-related aspects for a person's individual level of integration.

Major media events are typically something that people can expect to come up in interpersonal communication before and after the airing. But also in general, conversations about media are another important integrating phenomenon (Jarren, 2000), which may indirectly enlarge the audience of a medium. That media present people with a wide variety of things to talk about with others, and how this can be used to help a person in their interpersonal network and acquire social standing has been documented since the beginning of media use research (Berelson, 1949/1970; Herzog, 1944). Consequently, from early studies onwards, the conversation-stimulating function of media has been examined within the uses and gratifications paradigm (Greenberg, 1974; McQuail, Blumler, & Brown, 1972).

Awareness of topics from the media are thus a more short-term result of the integrative effects of mass media than long-term socialization. But media-related conversations are not necessarily confined to media *content*. The style of a message or even a given medium as such may also serve as a topic of interpersonal communication that helps build or maintain social relationships (Gehrau & Goertz, 2010). Some media are even so influential that they can affect what people consider to be important topics, even if they have not used the medium in question (Krause & Gehrau, 2007). People talk about media on an everyday basis, and these conversations lead to them exchanging knowledge, opinions, and emotions about media and their content (Keppler, 1994; Kepplinger & Martin, 1986).

Media can thus stimulate conversation, almost regardless of the actual media content. While they can trigger interpersonal discussion and help bring people together in small settings, it is likely that a wide reach of a media content entails more widespread conversations, and it is often non-political media that have the largest audiences. In live sporting events or other competitions (like the Eurovision Song Contest, an annual singing competition) the outcome is usually unknown, which is part of what makes watching it while the event unfolds excit-

ing. But other entertaining content is also preferably watched during the original broadcast—for example, final episodes of popular television series can attract a large audience and become must-see media events (Hyatt, 2012). And their *content* can have integrative effects as well.

2.1.2 *Content (I): Media transport messages about social reality*

Although the content of media that attract a large audience is often rather light-hearted, such as the aforementioned sports competitions or song contests, such forms of entertainment should not be dismissed in the discussion of integrative media effects. For one thing, a shared understanding of what is funny, exciting, or heartwarming is not self-evident. Bossart (1979) even claimed that making an entire nation laugh could be more integrative than a state-of-the-union speech (see also Vlašić & Brosius, 2002). It may, however, be difficult to entertain such a nation-wide audience in the same way. The line between what different people or social groups find funny and what not is a fine one (e.g., Cantor, 1976; Colletta, 2009). However, even if the reaction to media entertainment may not be identical across a mass audience, a shared awareness of the media content in question would still have occurred.

In addition, entertainment via mass media such as television is, of course, an important part of cultivation, through providing viewers with a common perception of reality, especially with regard to domains they cannot experience directly (Morgan, Shanahan, & Signorielli, 2009). Even if the mediated version of reality is distorted, it has a homogenizing or integrative effect, which can be assumed to be larger, the bigger an audience is. But entertaining media content may have even more positive effects on social cohesion, as studies in cognitive science show that, like reading literary fiction (Oatley, 2016), watching sophisticated fictional television series increases empathy (Black & Barnes, 2015; Dill-Shackleford, Vinney, & Hopper-Losenicky, 2016): Complex fictional narratives provide audience members with simulations of social reality and have been shown to reduce, for instance, stereotypes about minorities.

Not all media content will promote such prosocial effects, as there is, of course, an abundance of outlets, genres, and content items in the realm of media entertainment. Some of them reach a large audience, others only smaller groups.

At first hand, the ones that are received by more people can be assumed to exert stronger integrative effects, as discussed in section 2.1.1. But even less popular media can be beneficial for social cohesion: Vlašić (2004) describes this as the affordance of media to transport “metamessages” about social reality. These metamessages concern situations or problems that individuals, organizations, or social groups may experience and possible solutions for these. Both aspects are presented in media content, but not necessarily in the same way in every instance, across popular or less mainstream media. Still, even if highly different outlets address a given situation or suggest opposed solutions for a problem, they may still contribute to the same metamessage of what kinds of behaviors, for instance, are acceptable in the respective society.

The concept of metamessages has not been studied extensively in media research. Vlašić (2004) originally proposed it as a heuristic to describe how various media messages about a topic can contribute to an underlying (or meta-) message about social reality. He uses plastic surgery for esthetic reasons as an example that is present in many different media and media genres. Sometimes it takes center stage in a fictional or non-fictional context, in other instances, respective medical procedures, their forms, risks, and benefits may only be mentioned in passing. Taken together, however, an increase in the occurrence of plastic surgery in media content may transport underlying messages about the normalcy or everyday character of elective surgery or the status that physical attractiveness has compared to other individual qualities. If beauty is consistently presented as a goal to achieve, even by surgical means, this may heighten it at the expense of other values.

Thus, at a basic level, metamessages are linked to values about what is considered important or relevant in life. Research on values and media in general has shown that they are indeed present across a range of content items, genres, and outlets, including fiction and non-fiction, entertainment and information (Bruns, 1996; Mahrt, 2010). Subsequently, learning about society’s values during socialization also happens through the use of media. Yet these values do not necessarily have to be respected in every instance of media representation or be presented in a uniform manner (in a similar way, not all media content has to present plastic surgery in a positive light). In fact, violations of values and reactions to these violations from real people or fictional characters often make events worthy of media coverage or drive narratives (most prominently in crime dramas, for instance). And while people do not have to live by the values of their society,

they usually still know about them—and can choose to act in accordance with or against them deliberately (Rohan, 2000).

Long-term learning about social norms and values is a central part of socialization, and similar ideas about what is expected of individuals in a society are of course not only transported in direct contact with other people or through interactions with institutions (Hurrelmann, 2006). Yet, the contribution of individual media outlets or content items to this learning process may be hard to pinpoint. This is easier with a different type of media content that is usually assumed to have integrative effects.

2.1.3 Content (II): Media enable large public spheres

In a similar way to cultivation studies, other approaches from media effects research, e.g., framing, also describe the homogenizing outcomes of media use on people's perceptions about social reality (Tewksbury & Scheufele, 2009). While the rationale about underlying learning effects may be similar, framing studies usually consider news, rather than entertainment or fiction. Likewise, agenda setting theory assumes that mass media provide media users with a shared pool of salient issues relevant for their society (McCombs & Reynolds, 2009). As with entertainment, cultivation, and metamessages, framing and agenda setting processes can set in through multiple media messages from different sources, which set them apart from exceptional media events. But again, studies into such effects explain why media with much smaller audiences than, for instance, highly popular television broadcasts, can also contribute to social cohesion. Newspapers, for instance, often have a local or regional spread, yet they usually also cover national and international topics that appear in many other news media at the same time as well. Newspapers are also not necessarily read at the same time, like television programs, so instead of a shared parallel experience, they create more of a shared sense of what is relevant among their readers.

A diverse media offering, as newspapers provide in many countries, may even be beneficial, as too much integrative power of media is considered to be detrimental for society with regard to political issues. Maletzke (1980) and McQuail (2005) point out that media can present an overly rigid, uniform image of reality. This is mostly expected of totalitarian systems with a strong control of the media.

But also without censorship, a small and unified media system would struggle to represent a diverse society and would run the risk of, for instance, misrepresenting or dismissing minorities and their concerns.

Weßler (2002) consequently argues that integrative media effects with regard to societal issues do not necessitate a uniform society or media system—and neither is even desirable for social integration. He states that even in a diverse society with a diverse media system, media (and other forms of communication) can contribute to resolving conflicts between social groups, as long as three conditions are met: Regardless of the number of media available, it is sufficient that they observe and represent different societal groups, rather than all presenting a homogenized view of society. Secondly, members of society can use different media, as long as they do not completely ignore existing social or political conflicts. A third condition regards the way in which media present societal problems: Media discourse and the people involved in it need to engage in a form of conflict communication that does not devalue opposing positions. If groups whose interests are at odds with one another have such modes and spheres of exchange available to them, it becomes possible to balance their competing interests and find a compromise that both sides can ultimately accept. This conceptualization of successful conflict communication shares ideas with theories of the public sphere that emphasize rational discourse as a basis for the most democratic form of government (Habermas, 1962/1989). However, the conditions described by Weßler can easily also be applied to fictional narratives about social issues whose metamesages could thus also contribute to the constructive handling of conflicts.

It is thus not necessary to assume that only a limited set of media outlets with a large audience can produce integrative effects through presenting consistent pictures of reality. In fact, also a diverse offering of media and messages can contribute to integration, and this does not even necessitate people using the exact same outlets. Media about societal issues are likewise only one, albeit an important part of what makes media integrative. In sum, different combinations of content and technical distribution can thus be beneficial for social integration. This is largely discussed from a theoretical macro perspective in the German-language literature. And it is also apparent in, for example, the ruling of Germany's Federal Constitutional Court, stating that the country's public-service broadcasters fulfill "an integrative function for the state as a whole" (2nd broadcasting decision, 1971; M. M., Trans.), which is not limited to news and information about current

events. Broadcasters are thus granted certain rights and receive funding through compulsory license fees, but are in return obliged to cater to basic needs for information, entertainment, education, and culture for all parts of society.

By analogy, similar integrative functions can be extended to other mass media that provide socially relevant content to a mass audience (Maletzke, 1980; Ronneberger, 1964). Thus, in many different ways, media can contribute to the functioning of a society, from connecting people through shared experiences, facilitating everyday interaction, to offering a more or less comprehensive picture of said society.

2.2 Integration at different levels of society

The previous section summarizes some of the basic strands in the literature on social integration and media. It is fair to say that a variety of theoretical traditions exist that take very different views on the role of communication and media in the creation of social integration. Often, they concern different levels of society, some more micro oriented, others favoring a macro perspective. A large part of the literature on integration and media, however, is spread out over a number of subfields that deal with more specific cases of integration.

The problem of integration in modern societies is most broadly discussed in sociology, which is concerned with the creation of cohesion and organization in large social entities, e.g., nations. The interaction of the members of a society, its institutions, as well as the society as such is complex, and has been debated from Antiquity, through the Age of Enlightenment, to today (Peters, 1993). In his seminal overview, Peters outlines three basic dimensions of social integration: *coordination* of actions with other people, organizations, or their actions; *moral integrity* that ensures mutual respect in social interactions; and sharing collective ideas about values and a good life in *expressive communities*. As discussed above, all three dimensions can be present in the literal content of media or their underlying metessages.

Scholars like Maletzke (1980) subsequently see the media as essential for the integration of modern societies, but others discuss social integration without specifically explicating the role of mass media. As mentioned above, this may be

due to the difficulty of specifying the exact contribution that media make for the integration of society as a whole. It is evident, for instance, that individuals learn how to act in accordance with coordinating, moral, or expressive requirements through the process of socialization (while through their actions, they also contribute to reproducing the structures that have shaped their own socialization). In addition, mass media are generally seen as an important factor for socialization in modern societies (Hurrelmann, 2006). Yet how media (or rather: their use and content) are related to the many other and often more direct sources for socialization is difficult to determine. Subsequently, discussions about how to empirically measure integrative media effects on the societal level remain rather general (Jarren, 2000; Schönhagen, 2000; Vlašić, 2004).

The mass media come into play more directly when the integration of modern societies through a political system, like mass democracy, is considered. A political system based on the power of the people necessitates a broad public sphere, in which awareness of important issues facing a society can be raised, and actors can exchange knowledge and opinions about how to solve problems (Gerhards & Neidhardt, 1990). Vlašić (2004) summarizes that a shared orientation about issues and procedures to address and ultimately solve them is necessary to uphold societal integration from this political point of view. This may explain why the integration of certain social groups (and the role the media play in it) has been of special interest over the last several decades.

When people have been socialized in a society different from their current one, their integrative status in their new surroundings is of interest, as it becomes more palpable (and potentially problematic) than that of people without a migratory background. A number of studies have subsequently analyzed the role media play in the integration processes of immigrants (e.g., Hepp, Bozdag, & Suna, 2010; Kissau, 2008; Schatz, Holtz-Bacha, & Nieland, 2000; Trebbe, 2003; Trebbe, 2009; Viswanath & Arora, 2000; Vlašić, 2012; Vogelgesang, 2012; H.-J. Weiß & Trebbe, 2003). Similar research is concerned with the social integration of ethnic or racial groups, which may lack a history of immigration but still allow for analysis of their relationships with the mainstream of a society (Fujioka, 2005; Jeffres, 2000). In the special case of Germany as a reunited state, the integration of East Germans into a predominantly West German society after 1990 has been scrutinized (Döbler, 2012; Vogelgesang, 2003). In these cases, the question of integration becomes more concrete: How are social groups or their individual members identifying with their

country of origin, minority community, or cultural and social upbringing? On the one hand, this attachment is then often compared to the strength of ties with the mainstream of their current society. Use of group-specific media versus general-interest media may play a role in strengthening the social identity of group members, but may also hamper integration into the broader society. On the other hand, content analyses have shown that mainstream media often lack representations of minority groups or that they portray them in limited, stereotypical ways.

The mis- or underrepresentation of minority social groups may lead to different patterns of media use behavior, which are related to different integrative statuses. With regard to immigration, Berry (1980, 1997) uses *acculturation* as the overarching concept and distinguishes four subdimensions. These depend on the attitudes of individuals toward maintaining the identity and culture of their family's origin as well as building a relationship with the society they currently live in. In Berry's terms, "integration" describes a situation in which a person places importance on both aspects, while missing either or both can be described as assimilation (loss of relationship with family's culture), segregation (no relationship with the culture of the current society), or marginalization (lack of contact with both cultures). These strategies can be applied to media use, and different types of patterns emerge here, which have been shown to be related to the integrative status of immigrants (or their level of acculturation, in Berry's terms) with regard to society in general.

Studies on migrants or East Germans after 1990 consider their integration into society on a macro level, yet they only concern parts of the population of a respective society as they usually leave out the integration of non-migrants or West Germans. Studies about integration on the macro level for societies in general and the media's role in it are missing.

Instead, a last important research strand especially in the American literature on media and integration considers people regardless of their backgrounds, but is restricted to a lower level of integration, that of local communities. Situated between the macro level of nationwide cohesion and the micro level of everyday interactions between individuals, the local community has proven to be a fruitful meso level for theoretical discussion as well as empirical analysis of the role of the media for social integration (e.g., Ball-Rokeach, Kim, & Matei, 2001; Hoffman & Eveland, 2010; Mahrt, 2008; McLeod et al., 1996; Stamm & Guest, 1991). Its limited scope enables researchers to study the intersections of everyday social interaction

and sense of belonging to a number of imagined communities, as well as system-wide institutions and organizations (Friedland, 2001). Subsequently, Friedland and McLeod (1999) describe three levels of community integration, from individuals to associations and more formal institutions or organizations. All three levels are necessary for a functioning community in which democratic processes can be realized. And all three levels are connected to media that are integrated into the internal communication and organization on the three levels as well as into their interaction with the respective other two levels. These media fulfill agenda setting and framing functions, but also provide a wider sense of what constitutes a community, be it on the local or the more abstract national level, for instance by making a community visible to its members and outsiders.

From this perspective, community or local media appear as most powerful in integrating individuals, because they can cover topics closer to the individual's life-world or at least comment on them from a local perspective. In this regard, the national "elite media" (Friedland, 2001) are less powerful, because they are further removed from people's direct experiences—and possibilities for engagement. On the other hand, localized media inevitably also only reach smaller publics. So they may have a stronger impact, but on a smaller number of people.

Social integration is thus discussed on many different levels, and some seem to lend themselves more obviously for studies on media effects than others. The research also highlights the importance of three aspects in the study of media and integration: media content (e.g., with regard to the representation of social groups or political issues), use of different types of media ("ethnic" media or local versus national media), and integrative status of the users (most clearly studied for immigrants or other minority groups). For social integration on the level of the society, however, the discussion is generally more theoretical or abstract. Scholars tend to assume that media with large audiences are necessary to nurture integration on this macro level. Television is often implicitly or explicitly called for in this regard. Wolton (1990), for instance, argues that general-interest television is vital in providing audiences with "the same values, the same references, the same representations, and the same memories" (p. 6; M. M., Trans.), and he thus takes a stand against special-interest channels, even if these have high cultural or political aspirations. The development of the television market in Western countries, however, moves toward more variety with a larger number of special-interest channels, which explains why television has been another focus of integration research, especially since the 1990s.

2.3 Fragmentation and other negative effects of television

As a mass medium with often a very large number of viewers, television is generally assumed to have integrative effects, in part due to its socio-technical history (McQuail, 2005). Television is usually introduced in a country with a very small number of channels, or even only one channel at first. During the early decades of television use in households, this led to mass audiences for these pioneering stations. In this situation, television could fully develop its potential to enable shared experiences for large parts of a population. Technological advancements in transmitting television (cable, satellite), however, began to introduce more competition. Some countries have seen a diversification of the channels on offer since the 1970s, and the potential subsequent fragmentation of the television audience has been discussed (E. Katz, 1996; W. A. Katz, 1982). The advent of the “multichannel TV environment” changed the content available on television (Krüger, 1998; van der Wurff, 2004), as well as viewers’ behavior (Heeter, 1985; Lin, 1994; Webster, 2005; Youn, 1994). To what degree this has also affected television’s integrative effects has been a question of considerable debate, and not all scholars see television as ultimately beneficial for social cohesion.

The diversification of the television content on offer as well as the decrease in viewer numbers for the older channels is generally not contested. Yet as discussed in section 2.1, a diverse media offering does not necessarily have to result in a loss of social integration (Maletzke, 1980; McQuail, 2005; Weßler, 2002). Bonfadelli (1985) points out that diversification of the media offering and media use patterns could lead to fragmentation of the audience, social isolation, and inequality. But a diverse media system also enables differentiation in terms of taste or interest, which can lead to a situation of pluralism, a desirable state in a heterogeneous society. In such a media environment, users may choose from a diverse offering of media content. In fact, studies for television information (e.g., Coe et al., 2008; Iyengar & Hahn, 2009; Stroud, 2008) and entertainment (Bobkowski, 2009; Weaver, 2011) show that people have a tendency to select programs that are in accordance with their attitudes or other dispositions. They can usually indulge this tendency better with a broader offering of channels.

Yet, this form of selective exposure could make people share fewer media experiences with others directly than in earlier times of television use—although such a viewing behavior would still give viewers plenty to talk about with people

they meet in their everyday life (Hasebrink, 1997). In addition, approaching the subject via the decreasing number of viewers per channel in a multichannel environment can lead to overestimating the actual fragmentation of the audience. Of course, the audience for a given channel (or television show) tends to be smaller when there is more competition. Yet the people who make up these audiences usually do not watch only this one channel (or show). Media repertoires can be diverse, with different media or types of content serving a variety of purposes, depending on who uses them under which circumstances (Hasebrink, 1997; Webster, 2005). Webster has shown that even viewers of special-interest or partisan channels (e.g., Black Entertainment Television or the Republican-leaning Fox News) only spend a small share of their viewing time with these channels (in these cases, 2.7 and 7.5% of their total viewing time, respectively). Instead of sticking to only a small number of channels, television viewers combine a variety of stations, which leads Webster to conclude that there is more evidence for overlapping TV audiences than for their increasing fragmentation.

In addition to the question of fragmentation through an increased number of television channels, scholars like Putnam (1995a, 1995b, 2000) more generally call into question whether television is actually beneficial for social integration. While acknowledging that television provides viewers with shared experiences, especially around major media events such as the Kennedy assassination or the O. J. Simpson trials, he sees the detrimental effects of television viewing as more important: Time spent watching television is not used to communicate or interact with others, be it in the private sphere of the family or in local clubs and institutions. In addition, he argues that the preference for entertaining television programs is negatively related to civic engagement. Especially the earlier versions of Putnam's analysis have met considerable criticism (e.g., Moy, Scheufele, & Holbert, 1999; Quintelier & Hooghe, 2011; Shah, 1998; Shah, McLeod, & Yoon, 2001; Vergeer & Pelzer, 2009). Looking at mostly aggregate trends in TV content and TV viewing on the one hand and social as well as civic activities on the other does not prove causality (Norris, 1996), and global measures of TV consumption may be too coarse-grained to show the medium's true relation to social integration (Quintelier & Hooghe, 2011). Like newspaper reading, watching programs devoted to current affairs, for instance, has positive social effects (Shah, 1998). But even if based on rough measures of media content and media use, Putnam's works are remarkable for their discussion of media effects on social cohesion within the general

population, not limited to an ethnic or social group or select local communities. However, it should be noted that his approach to the social effects of media use is linked to the concept of social capital (instead of social integration in general). The overlap between these concepts will be discussed in section 4.2.

In sum, there is a consensus that beneficial effects of television (and other mass media) exist in a mass society. Even if the TV audience becomes more fragmented with a larger choice, television still remains a mass medium that is widely assumed to have a long-term homogenizing and thus integrative effect. But since the late 1990s, communication research has seen a new discussion, as television as the “new medium” has been replaced: The advent of the Internet has led to new hopes, but mainly to concerns about the potentially detrimental effects of the web and online media on social integration.

2.4 Summary

As the discussion in the previous sections has shown, the literature on social integration and media stretches across a wide range of approaches, with references to different neighboring disciplines—mainly sociology and political science. Social integration is understood as the cohesion between individuals of a society or other social system (Lockwood, 1964/1991) that enables them to interact with each other, but also the institutions of their society (Peters, 1993). In a well-integrated society, interaction between members is fruitful, so that coordinated action becomes possible and arising conflicts can be resolved. In this sense, social integration is the state or process of forming a whole from separate parts; in this case, a society from individuals.

In a mass society, which encompasses millions of individuals and multiple institutions, the process of integrating individuals into one “nation” (or the state that results from this process) can hardly be imagined without mass media of communication. On the one hand, these are needed to display, but also negotiate a shared understanding of what it means to be a member of this society—including learning about its norms, values, and the things that are considered important and should be striven for. On the other hand and in a more practical sense, problems facing the nation need a solution, and many societies have installed

executive and legislative systems that afford representation of the members of society, their needs, and opinions, instead of those of just a powerful few. It thus becomes necessary to collect relevant issues, discuss possible solutions, and select one to adopt (Gerhards & Neidhardt, 1990; Habermas, 1962/1989). To ensure these functions (and others), in such representative political systems media are granted certain freedoms, and some countries, in particular in Europe, even organize media as public services.

But based on these generally accepted assumptions, what role the media play for the integration of a society has been studied in different ways, and the results are far from homogeneous. Most approaches do not study influences of the media on the macro level of the society, but consider lower levels. These are concerned with the interaction of individuals or their degree of integration into social groups, societal systems, or their attachment to a society in general (the last aspect applies mostly to people who grew up in different societies than their current ones, mainly immigrants or, in the case of Germany, former citizens of the GDR). Many studies consider the relationship of media use to these constructs, while others look at the representation of social groups or societal issues in mass media to determine their performance for social integration.

Different factors have been discussed to distinguish beneficial versus detrimental influences of the media on social integration. All of them are necessary, rather than sufficient conditions for integrative media effects. But their lack forms the basis for criticism of media considered to hamper or even degrade social integration.

1. A broad reach is considered beneficial for integrative media effects. This is, however, often studied *ex negativo*, for instance with regard to the increase in television channels and the effects that a subsequent fragmentation of the audience can have. When reach is explicitly studied, it is mainly compared for different outlets of the same medium, for instance television channels, but not across different media, such as television, radio, or newspapers.
2. Coverage of topics that are of interest to or concern large groups of people is assumed to have more integrative effects than special-interest topics. Media events, such as major sports competitions, but also terrorism or

natural disasters, help bring members of a society together, as only a few are directly affected by or able to attend an event. But different types of content are hardly ever compared.

3. Coverage of societal issues and proposed policies to remedy them are necessary to integrate societies through a shared public sphere. Studies in this area often consider a range of different media, including, for instance, newspapers and television, but are mainly confined to news (or even single issues), and do not consider other types of content that could also refer to the issue, such as fictional narratives or political satire. In this regard, stronger integrative effects are assumed when media cover a range of viewpoints on a given issue and/or treat opposing views held by different groups with respect. This should enable the peaceful resolution of conflicts (Weßler, 2002).
4. On an abstract level, media make society visible to itself as they contain multiple messages that represent social reality. Even if the individual messages differ, they may still contribute to the same metessages about how society works or what is generally considered of value (over what else). Through such metessages, media therefore contribute to the socialization of members of the respective society. This type of long-term integrative effect is studied mainly in the field of cultivation research, which looks at small parts of social reality (for instance crime rates and fear of becoming the victim of a crime) and analyzes the relationships between media messages, individuals' media use, and the beliefs about social reality they hold.

When these factors are present, different processes result in the actual integrative effects of media: Use of the same media, sometimes even at the same time, is a shared activity for large groups of people. The content present in these media can lead to shared topic awareness, knowledge, and/or emotions. Coverage of relevant issues and policies suggested by different political actors allows the formation of opinions on an issue collectively considered important and also an informed vote during an election. Lastly, media content, and even media in general, are a common topic in interpersonal communication, which brings people together in their everyday life.

Although long-term effects of media use on social integration of individuals may be hard to establish empirically (Hoffman & Eveland, 2010), it can be assumed that well-integrated people use more media that have integrative potential. This may sound like a truism at first, but media users who predominantly stick to special-interest or niche outlets and content should be less likely to know about important societal issues (beyond their own interests), learn about gradual changes in metessages about appropriate behavior or valued goals in life, or share experiences with other members of their society. The relationship can be mutually reinforcing (Slater, 2007), with well-integrated individuals being able to profit even more socially from being well informed about media topics or talking often with others about media and their content, for instance.

Given all these different assumptions, if one wants to assess the integrative effects a medium can have, different aspects of its integrative potential can be examined, while all of them can hardly fit into one research design (as evidenced by the studies summarized in the previous sections). As stated above, the fulfillment of any of the aforementioned conditions does not guarantee integrative effects. But the failure to supply them can make integrative effects impossible. And a medium that performs worse than another can be assumed to have fewer integrative effects (or a relatively small integrative potential).

Rather than following only one of the multiple areas of research into social integration and the media, this study is based on a broader understanding of what makes media integrative. This results from the discussion that has arisen in recent years about the integrative effects (or rather: lack thereof) of the Internet. While traditional mass media are mostly credited with positive effects on social integration (apart from multichannel television), the Internet is considered to be different somehow. The respective fears about fragmentation (or a loss of social integration) due to the Internet touch upon different aspects of integrative media effects, which is why it was necessary to provide a general discussion (if at times in rather broad strokes) about what are generally assumed to be the integrative effects of media. Chapter 3 gives an overview of how and why the Internet is thought to be different from, for instance, television or newspapers.

3 Fears about a loss of integration due to the Internet

Many of the classic approaches to social integration and media did not consider online media. An exception is Friedland (2001), who explicitly named “global computer networks” (p. 382) among the media that are needed to create cohesion on the system level of a society. Like others (e.g., Ferdinand, 2000; Hill & Hughes, 1998; Holmes, 1997; Jones, 1998), he also saw potential for more micro levels of integration, where “virtual communities” (p. 377) could help people feel attached to groups formed online, but could also be used for the organization of grass-roots political action.

The Internet also has been described in a more ambiguous or downright negative light with regards to its effects on society, social integration, and political engagement. In a recent overview, Webster (2014) lists the following metaphors that have been used to summarize such concerns: “*gated communities, sphericules, silos, echo chambers, cyber-Balkans, red media-blue media, or filter bubbles*” (p. 19; original emphasis). All of these terms express ideas about the fragmentizing effects of online communication and media, but they are linked to different aspects of the Internet, from technical properties (section 3.1), to content available online (section 3.2), or the behavior of the usership (section 3.3). Together, these differences could have different effects on social integration than mass media (section 3.4).

3.1 Technical properties of the Internet

Starting with the technical properties, the Internet is based on a structure of hyperlinks, which make it a “lean forward” (Jansz, 2005; Strover & Moner, 2012) or “research medium” (Schönbach, 2007; Schönbach & Lauf, 2004). Compared to “lean back” or “display” media, like television or, to a certain degree, newspapers, using the Internet constantly requires the user to make choices about what to access next. While linear audio-visual content or print-newspaper articles also exist online,

often in the same format, they are usually arranged differently. Video content is not broadcast in a succession of programs following a schedule, and news items are not necessarily bundled as they would be in a printed issue, where the editorial team decides which issues deserve how much attention. The websites into which unbundled online content is embedded additionally offer many more options for the user to choose from. Related content can be suggested, via words or parts of a video linked to other content items, which makes using websites a much more individualized experience compared to watching television or reading a newspaper. A user can simply go anywhere from any point online, while the options with traditional media are much more limited (even when multiple TV stations are available, for example). While audiences of traditional mass media are far from being truly passive, it seems fair to say that the Internet requires more choices more frequently about how to continue using it (or its multiple platforms and services).

The nature of the Internet as a research medium is embodied most clearly by the status of search engines, which are a staple of virtually all online users. Among the most frequently visited websites of the globe, search engines like Bing, Baidu (a Chinese language search engine), or Yahoo figure prominently, all dwarfed, however, by Google, which holds the number one spot.¹ Given that there are vast amounts of content available online, and no curators that select a relevant set of content items for users (like an editor would in a news organization or a program planner for television), it becomes necessary to make the actual content items accessible. While one can of course go from one page to the next via suggested hyperlinks or build a selection of bookmarks for frequently visited websites, users always have the option to use a search engine to access and select new content from previously unused sources.

Beyond these basic technical structures, online platforms allow for even more selectivity, which is not necessarily intended by users, but nevertheless is based on their usage behavior. Webster (2014) describes these as “unobtrusive structures”: Websites analyze how their content is used, and through cookies or sign-in features, they can keep track of users as well (or at least individual computers or browsers). This allows website providers to customize the selection of content that is shown to a particular user (or person using a particular browser) to match

1 According to www.alexa.com/topsites (11 April, 2017).

past usage behavior of this person (or browser). This principle is most noticeable with advertisements. When using a search engine or other website to find information about a product or service, one might later notice that ads matching the search terms or showing products one looked at earlier keep appearing on other websites. In such cases, a (flash) cookie has stored the information about search terms and visited sites, which allows advertisers to display the matching ads when other sites are accessed via the same browser.

The same principle of recording a user's (or browser's) behavior and matching future content can be employed by a variety of websites, be it news sites, entertainment sites, and even search engines. While advocates might see this as "giving users what they want," criticism has been raised that such algorithms could go as far as showing users only content that confirms their existing knowledge or preferences, while omitting challenging, but potentially relevant or important information. This fear has been prominently described as the emergence of a "filter bubble" in which algorithms only let users see content that matches their preferences, so that they remain unaware of alternative options (Pariser, 2011). Since the algorithms are usually business secrets, research independent from a site's owning company into the effects of these unobtrusive drivers of selection is rare as they are difficult to assess (Gillespie, 2012; Wells & Thorson, 2017).

In some cases, selection mechanisms may be mostly invisible for the average user, but in others the users actively (i.e., knowingly) shape what content they want to receive, or at least whose (Thorson & Wells, 2016). Popular social media sites such as Facebook, Twitter, Instagram, or YouTube offer the possibility, in different variants, to subscribe to the content posted by other users of the platform. "Friending" other people on Facebook or "following" select accounts on Twitter means that each user gets a unique combination of posts displayed when they log into these platforms. Users thus become the curators of their own feed of updates, and platform providers again take into account the users' past behavior to determine the selection of content they see or the order in which they see it (e.g., Honkala & Cui, 2012; Paek, Gamon, Counts, Chickering, & Dhesi, 2010).

Due to very different technical features of the Internet as such and particular websites (from search engines to social media platforms), online use thus differs from traditional mass media. A higher level of selectivity can be expected with regard to all the content accessible via the Internet, which may affect the integrative effects usually ascribed to other media.

3.2 Online content

With regard to the content available online, it has already been noted that many types of content that can be received via traditional media may also be available online. The individual content item as such may thus have the same integrative effect as if it had been used via television or a printed newspaper. (Yet it is doubtful whether the integrative effects of media really boil down to single texts or videos.) On the other hand, the sheer amount of content available online may make it even more unlikely that these are actually received by users. The popularity of websites typically follows a power-law distribution, an L-shaped curve with a few highly popular offerings and a steep decline toward less and less often frequented sites. This “long tail” phenomenon is apparent for websites as well as for content within websites (Anderson, 2006; Cha, Kwak, Rodriguez, Ahn, & Moon, 2007). Optimists see this as an increased freedom for users to choose what they like or are interested in, while pessimists warn of a potential danger lying in the abundance of content. While it may be great to be able to find more songs, books, or movies of a particular genre online than in any brick and mortar store, when it comes to content that carries extreme political opinions, far removed from societal consensus and typical metamessages, the freedom of choice may be potentially dangerous. This is the basis for Sunstein’s (2007) fear of “echo chambers” forming online, where users can find content for any possible political (or other) orientation. If such sites actively exclude or at least do not acknowledge alternative worldviews, they can be catalysts of political extremism. Such environments would indeed not fulfill Weßler’s (2002) requirements for integrative conflict communication (see section 2.1).

In such environments abundant with content, the question of what becomes popular has interested many stakeholders, from platform providers, to content creators and advertisers. As Webster (2014) points out, predicting the success of media content is famously summarized by the industry wisdom “nobody knows” (p. 55). Movies and television shows may fail despite great scripts, talented actors, or superb producing. Experimental research on songs show that the quality of the offerings only partly explains their success (Salganik, Dodds, & Watts, 2006). For online content, however, researchers seem to be able to identify a number of features that make some content items more popular than others and may even make them “go viral.” The difference from conventional media production

partly lies in the much increased amount of content and instances of use that can be scrutinized. This allows for data mining techniques, which can be used to discover hidden patterns in large data sets (Barbier & Liu, 2011). As the use of online content leaves traces in the log files of the content provider, the resulting large amounts of data can be examined.

Berger and Milkman (2012), for example, analyze all articles published by the New York Times online within three months and study the frequency of forwarding articles via e-mail as a measure of popularity. They find that positive articles are more frequently shared than negative ones, but that negative content that carries a high level of emotionality (inciting either anger or anxiety) also are frequently passed on to other people. The scholars use controlled experiments to confirm that arousal explains why people share online content (see also Berger, 2011). Similar patterns have been observed for the frequency with which both commercial and user-generated videos are shared on Facebook (Nelson-Field, Riebe, & Newstead, 2013), while a study of reading and sharing of BBC online news items reveals that some topic categories (e.g., social welfare or science and technology) are more successful than others (Bright, 2016).

Widespread reception of a “viral” content can also be found in another form of Internet phenomenon, the online meme. The idea of memes as cultural signifiers that are passed on similar to how genes are in biological procreation predates the online era (Burgess, 2008; Knobel & Lankshear, 2007). Traditional media, cultural performances, and artifacts can also catch on and be used as points of reference for humorous effect or, for instance, to mark belonging to a group whose members are the only people who understand their significance (Phillips, 2015). But memes are not only shared, like viral content items; they can be creatively reused, changed, or combined with other content. While this is again not exclusive to online memes, the latter make these creative reappropriations visible and much more easily analyzable. Successful, i.e., often viewed and recreated, YouTube memes show a number of common qualities (Shifman, 2012): They often have a certain simplicity, a repetitive element, and show ordinary people. These features make it more likely that other Internet users will upload their own versions of a meme. Humor is also often apparent, sometimes in combination with showing “flawed” males (i.e., boys or men that do not fit into typical images of masculinity, due to age, sexual preference, or outward appearance), as Shifman calls them. She finds that memes often lack a political context, as lighter content can catch on

with more people, without alienating them due to attitudes expressed in the content of the meme. In an earlier study, Knobel and Lankshear (2007) had, however, also found popular memes containing a political angle, such as social or political criticism. Different metamessages about societal issues or social groups may thus be important in explaining the massive sharing of online content.

Abundance is probably the most notable aspect of online content. It leads to large amounts of content items that are hardly seen by anyone, and a relatively small proportion of content that can attract tens of millions of users. Different types of content, news and practical information, but also music and other entertaining content, can become popular, especially if they carry emotions and/or are arousing. It is important to note, however, that the vast majority of online content does not become popular but remains in the long tail—both on the web in general and within popular sites (like the online version of the New York Times or YouTube). It is possible that niches of users form around such content, where like-minded people enjoy their shared sense of humor or bond over the understanding of certain cultural references. While such content can indeed strengthen the ties between their respective users, it will generally not unfold a broader integrative effect beyond their niche. But the studies of content virality and memes also show that the success of online content not only relies on the nature of the content itself, it also strongly depends on the structure and behavior of the usership.

3.3 Online use

Online content is stored in bits, which are easily archived, copied, distributed, and searched (boyd, 2010). As they are accessible through networks of servers, platforms, and services, they are also easy to share with other users (Papacharissi & Gibson, 2011). For young users, this has led to a change in perspective with regard to how one learns about current events: One does not have to actively search for information, because “if the news is that important, it will find me” (Stelter, 2008; the quote was later popularized by J. Jarvis, 2008). It is not surprising, then, that for some online content providers a considerable amount of usage comes through social sharing, i.e., people retrieving content through recommendations from other users (Bright, 2016). Links to online content can be easily forwarded

through electronic interpersonal communication (e-mail, instant messaging), embedding of content in websites, or recommendation buttons that many platforms implement to encourage users to spread their offerings through social network sites (like Facebook or Twitter). A study of 20 million YouTube videos shows that more than a third of all views of these videos comes from users accessing a video directly via its URL, watching it via another website, or following a link from another site (Brodersen, Scellato, & Wattenhofer, 2012). This kind of *social sharing* is especially pronounced for the overall less popular videos, which involves those further down the long tail of YouTube videos.

It is this realm of not too popular content that is most frequently discussed with regard to social integration. Here, niches can form, as has been demonstrated for interests in cultural products, like books, DVDs, or music (Anderson, 2006; Leskovec, Adamic, & Huberman, 2007). The broad range of products available online enables users to find more of the types of content they like. While some product interests are widely shared, others are more particular. Overall, communities of interests form around unique or even idiosyncratic *combinations* of interests (Leskovec et al., 2007). Around such patterns of preferences, communities can be built, both in real life as well as on online platforms. In the latter case, the spread of information through such communities of interest can be studied.

Diffusion of information has a long-standing tradition in communication research (Rogers, 2003). From the early years onward, the integrative status of people in social networks has been connected to their learning about an innovation. Some people are well connected and help in the dissemination of information quickly and/or broadly, while more isolated individuals may be reached much later or may only rarely pass on an innovation to others. Users of social network sites report the feeling that they receive more diverse content through these platforms than if they would stick to traditional mass media (Hermida, Fletcher, Korell, & Logan, 2012). But with online platforms, diffusion of information can be studied on a much larger scale, beyond reports from users. They allow analyses of the flow of information in large networks under natural conditions (Thorson & Wells, 2016). Studies of information diffusion on the microblogging platform Twitter, for example, show that new information mostly tends to travel within communities of users, and only few content items go viral, i.e., reach users broadly across communities (e.g., Weng, Menczer, & Ahn, 2013, 2014). The chances of content becoming viral increase if influential users are reached early in the diffusion process.

Such studies highlight that the social context of users is as important for the spread of online information as it is for information that travels via more traditional channels. This brings the issue of homophily to the foreground. While many online platforms are open to all Internet users, when people start connecting with other users, will they form diverse and open or more likeminded and close-knit communities? Studies show that even though online platforms may enable users to technically connect with very large numbers of people, direct interaction is usually only observable among networks of not more than between 100 and 200 people (Dunbar, 2011; Gonçalves, Perra, & Vespignani, 2011; Leskovec, Lang, Dasgupta, & Mahoney, 2009). These networks tend to be more diverse than real-life personal networks (Goel, Mason, & Watts, 2010; Hampton, Goulet, Her, & Rainie, 2009), but users interact more frequently online with people who share their attitudes (Goel et al., 2010).

Thus on the one hand, online users can potentially access very different types of content and access much more than via mass media. Yet the affordances of online platforms to customize which content one sees and the tendency to connect with like-minded people (who may share relatively homogeneous content) explain prominent assumptions about the fragmentation of online users into echo chambers, sphericules, or the like. These are typically grounded in the theory of cognitive dissonance and subsequent tendencies for selective exposure. Dissonance between cognitions (e.g., attitudes or knowledge about the world) is assumed to be undesirable (Festinger, 1957). To avoid it, people should show a preference for information that is in accordance with their existing cognitions, thus selectively exposing themselves to more consonant rather than dissonant information (Freedman & Sears, 1965; Sears & Freedman, 1967). This effect has been documented in numerous studies over the last 60 years (reviews are provided by, e.g., D'Alessio & Allen, 2007; Hart et al., 2009; Smith, Fabrigar, & Norris, 2008). However, studies have also shown that a preference for consonant information does not automatically entail avoidance of dissonant information (Donsbach, 1991; Garrett, 2009b; Garrett & Stroud, 2014).

With regard to mass media content items online, research reveals that users prefer information from a source they deem in accordance with their own opinions. In the US context, this is often studied for political leaning toward Republicans versus Democrats, hence the term “red media–blue media” (Flaxman, Goel, & Rao, 2016; Garrett, 2009a; Iyengar & Hahn, 2009; Stroud, 2008). When news or

other political information is presented on a platform that shows such content in combination with a social component (e.g., a social network site), the (perceived) political leaning of the content is connected with the (assumed) opinions of the users with whom an individual is connected on this platform. On the one hand, platforms like Facebook or Twitter often contain information on current events, but it is posted by other users, so automatically appears with their endorsement or criticism. On the other hand, when people post news or political opinions themselves, they may think about the users for whom these will be visible, and thus actively try to shape their own image toward this imagined audience (Rudat & Buder, 2015; Rudat, Buder, & Hesse, 2014; Schmidt, 2011). The presence of other users in online spaces where information is received may subsequently affect which information is displayed and ultimately used.

Messing and Westwood (2013, 2014) show via experimental studies that the social context of mass media content affects whether users of a social network site select a posted content item or not. It appears that this sort of social influence has different dimensions: If aggregated numbers of use or appreciation are displayed (e.g., number of “likes” on Facebook), these can override avoidance due to perceived disagreement with a source. A person leaning toward the political Left, for instance, is as likely to click on a story from Fox News as people from the middle or right-wing end of the spectrum if the news item is recommended by thousands of users (Messing & Westwood, 2014). Thus, people do seem to have a preference for mainstream, frequently forwarded, or otherwise recommended content. However, a closer look at their personal networks shows that a strong tie with another user makes it more likely that a person clicks on links or content shared by this friend or close acquaintance (Messing & Westwood, 2013). Similar findings stem from analyses of tens or even hundreds of millions of users of social network sites. Tie strength is an important factor in information diffusion, with close friends or acquaintances being more likely to post the same external content (Bakshy, Rosenn, Marlow, & Adamic, 2012; Bond et al., 2012). In addition, displaying the names and profile pictures of contacts within a social network site increases the probability of passing on content (Bond et al., 2012).

Due to easy social sharing, and thus the intertwining of media content and interpersonal relationships, online user behavior thus has some unique characteristics that sets it apart from mass media. The amount of content available allows users to follow their preferences more freely. On the other hand, many platforms show

different indicators for social relevance (be it in general or with regard to a user's personal network), which make users select popular content more frequently. This raises the question if and how online use affects social integration.

3.4 Effects of online structures and use

The structural features described thus far in the current chapter explain some of the fears raised about online use leading to fragmentation: A higher need for selectivity, the availability of more diverse and less mainstream content, and the spread of information among like-minded people are some of the main concerns. If online media are different from mass media, due to their technical features or typical content, and if people use them in different ways, this does not, however, necessarily have to lead to different *effects* of this use. In fact, in spite of all the differences summarized in Chapter 3 so far, some findings even allow for a positive outlook on online use and social cohesion. Webster and Ksiazek (2012), for instance, argue for an “audience-centric” perspective on fragmentation and online media. They point out that people combine a variety of media outlets in their daily media routines, or repertoires (Hasebrink & Domeyer, 2010; Hasebrink & Popp, 2006). Thus, even if someone uses a special-interest website or consumes a lot of content based on his or her contacts' suggestions on a social network site, this person usually still uses broader and more mainstream-oriented outlets as well. Webster and Ksiazek analyze the use of over 200 popular websites and television channels. They show that the large majority of these outlets share their respective audience with almost all of the other offerings. The scholars thus conclude that a “massively overlapping culture” (p. 51), instead of fragmentation, is the dominant pattern of audiences in the online era (see also sections 4.3 and 7.1).

So, if online media appear to complement or at least be used parallel to traditional mass media, all does not seem to be lost with regard to the integrative functions of media in the online era. Yet studies on the effects of online media use also find evidence for possibly fragmentizing effects. Of special interest for communication research is fragmentation due to political opinions and worldviews. In this case, scholars often prefer to speak of polarization, rather than fragmenta-

tion (J. K. Lee, Choi, Kim, & Kim, 2014; Tewksbury & Rittenberg, 2012). The term highlights that the use of less mainstream and more extreme media outlets may reinforce existing political beliefs, which may become more pronounced over time due to repeated exposure. Longitudinal studies for traditional mass media have documented such polarization effects, for example for beliefs about global warming and the use of conservative and non-conservative media (Feldman, Myers, Hmielowski, & Leiserowitz, 2014). In a similar vein, Tewksbury and Riles (2015) show that opinions of Democrats and Republicans tend to diverge over time as a result of their online news use.

Overall, cross-sectional studies for online media show mixed results. Some find indications for patterns that hint toward the existence of online echo chambers (Sunstein, 2007): A Korean study found that homogeneous networks on social media platforms promote skepticism against media reports that are inconsistent with users' political orientation (Baek, Jeong, & Rhee, 2015). Receiving and exchanging information with like-minded people or from respective outlets seems to provide confirmation or insulation from dissonant information.

On the other hand, Kim and colleagues (Y. Kim, 2011; Y. Kim, Hsu, & Gil de Zúñiga, 2013; J. K. Lee et al., 2014) propose a mechanism that could favor a diverse media uptake via online media: Through a number of studies, they show that frequent engagement with other users via social network sites makes it more likely for users to come into contact with content of diverse political orientation, thus increasing heterogeneity of the media diet. Likewise, Wells and Thorson (2017) show that news interest, blog readership, but also a large network of contacts increase the number of news items users see on Facebook; this, however, does not affect their knowledge about specific current events.

The effects observed in the reported studies on effects of social media use are generally small, which may be due to the fact that, as Webster and Ksiazek (2012) have shown, even people who use special-interest websites and other alternative sources for news also consume more mainstream media. Likewise, users of social network sites will come into contact with media content via other sources. Given the still small number of studies available on the issue, the different results can also be due to different study designs or the aspects of reality covered. It remains to be seen under which circumstances the use of what types of online platforms and websites leads to what amounts of dissonance or consonance in users' media uptake and how this affects social integration.

3.5 Summary

The Internet contains many different outlets, applications, and types of content, which makes it different from mass media—but which is also likely a reason for the heterogeneity of research into the effect of the Internet on social integration. As outlined above, its technical structures create expanded facilities to offer content to users, which requires more search and selection behavior on their part, but also could lead to a fragmentation of online use. Searching for and selecting content online in turn also gives users more room for a narrowing of received content, due to individual preferences on the one hand or bias through the sharing of content among like-minded users on the other.

With regard to the four factors that were discussed as necessary for integrative effects of mass media in section 2.4, the Internet may thus be different:

1. Online audiences may be generally smaller than those of mass media. Even viral content items are not likely to connect audiences in a shared activity in the same order of magnitude as popular television events do. With regard to a media event, of course many websites will publish and redistribute respective content as well, while users may share relevant content items via social media or online interpersonal communication. Yet in such cases, online content and online use would be added to mass media, while it is hard to conceive of the opposite scenario on the same level.

Studies on online reach usually show that only few outlets or content items reach a large audience, while most remain in the long tail of niche offerings. This leaves much more room for a fragmentation of online audiences than with, for instance, television or newspapers.

2. Such niche offerings may be attractive for smaller groups, but apparently, it is difficult to find online content that is as universally attractive as, for instance, television series or blockbuster movies. Subsequently, the topics covered in these less popular kinds of online content could bring smaller groups closer together, who share the same interests or other characteristics to begin with, but could also bond over the fact that they form a niche online and thus distance themselves from the mainstream.

3. From a public-sphere point of view, such niches could be spaces where also social or political issues arise or respective discussions unfold—mainly because the people adhering to the niche are concerned by an issue. If such issues gain awareness beyond the niche, this could spill over into larger arenas of the public sphere. Online niches are much more open for topics and issues in a bottom-up process than mass media, which could serve integrative functions when the respective topics receive coverage by other media as well.

On the other hand, niches for political or socially relevant discussions could also have the opposite effect as they can be more partisan than mass media, which necessarily aim more at the mainstream. If discussions do not spread to other arenas and niche members continue to debate among themselves, their opinions on the issue could become more extreme than at the outset. The resulting polarization of online niches would be detrimental for social integration, as it could hamper conflict resolution.

4. The formation of online niches also raises questions about the metames- sages that may be transported via niche content. No general ruling can be given about whether metames- sages that are different from the main- stream are beneficial or detrimental for social integration. If, for instance, niche content from online sources promotes prosocial values, such as tolerance, self-acceptance, or respect for minorities so far discriminated against in mainstream media, it could have positive effects. On the other hand, online spread of hate, misinformation about or misrepresentation of social groups, or antisocial behavior such as trolling or cyberbullying, for instance, can have negative effects.

In sum, the Internet may have different effects on social integration than mass media, but not all of them have to be negative. Given the various views enu- merated above, however, the effects of the Internet on social integration may be much more complex than the warnings of online echo chambers (Sunstein, 2007) or filter bubbles (Pariser, 2011) may suggest. Online niches, for instance, afford more diversity or pluralization, of which a certain amount is to be expected in diverse societies. However, an uncoupling of online niches and their users from mainstream discourses and metames- sages could also be possible. But so far, the

evidence does not suggest widely separated niches of people who lose touch with other audiences, and more nuanced and comparative analyses are needed.

Most studies discussed in the current chapter in fact do not compare online media or their content with offerings from mass media. Given the recency of, for instance, social network sites, it should not be surprising that scholars first work on understanding the mechanisms of content selection or building of contact networks within the sites, before comparing them to more traditional variants of the respective behaviors. However, this makes it hard to assess whether the *effect* of various online behaviors actually differs from that of mass media use. As summarized in section 2.4, this could concern effects on media use as a shared activity, shared content awareness, knowledge, or emotions, forming opinions on the same issues, and engaging in media-related conversations with other people. And in a second step, again, if such different effects occur due to the use of online media and content, well-integrated people should also show different patterns of online use when compared to less socially integrated individuals.

Given that many respective accounts already exist, studies should look beyond the mere description of online structures or their differences from mass media. Rather, the integrative potential of the Internet, individual online offerings, or usage practices should be assessed with regard to such indicators of integrative effects. This should advance the understanding of how the Internet could lead to fragmentation—or in the end not be so different from traditional mass media.

In light of the diversity of research in this area so far, such an undertaking should carefully consider how socially integrative effects of online and offline media can be assessed. Before the specific approach chosen in the present study is introduced, previous measurements of social integration with regard to media will be discussed.

4 Measurement of media effects on social integration

Chapters 2 and 3 provide an overview of the heterogeneous field of research on social integration with regard to mass media and the Internet, respectively. It should come as no surprise that across the variety of presented studies, integrative media effects are defined and ultimately operationalized in a variety of ways. Three broad types of measurements can be distinguished that are related to conversations about media and their content (section 4.1), the socially integrative status of media users (section 4.2), and the more aggregated effects of audience fragmentation (section 4.3). These are applied to either or both characteristics of individual media users and aggregate indicators for the integrative effects of media on society in general.

4.1 Conversation-related measures

A number of studies build on what Vlašić (2004) describes as the lowest level of integrative media functions (see introduction to Chapter 2): Media give people ample material for interpersonal conversation. The frequency of conversations about media and their content subsequently has been used in some studies as a proxy for the integrative potential of media (Stark, 2013). For instance, scholars compare television viewers with small or large channel repertoires and the frequency with which they talk to others about television content (Handel, 2000), or TV viewers' assessment about how well the medium can serve in interpersonal communication when the number of available channels increases (Holtz-Bacha & Peiser, 1999). Similar questions have been examined since the advent of the Internet: Does the frequency of conversations decrease when people have more (online) media to choose from (Gehrau & Goertz, 2010), or does the number of issues people consider important change (Gehrau, 2013; Haas & Brosius, 2013; J. K. Lee, 2009)?

The cited studies do not reveal stark changes in conversational habits when more media options become available through an increase in television channels or via the Internet. This may be due to the fact that people can of course still talk about topics from the media even if not all participants in the conversation have received the same media content. Likewise, time spent with media has increased with the rising number of media outlets (Breunig & Engel, 2015), so that users may combine more and more diverse offerings in their repertoires.

But the missing connection between conversations about media content and changes in the media landscape may also be due to the fact that the frequency of talking to others about topics from the media may be too far removed from what this indicator is supposed to measure: social integration. This may be especially problematic when aggregate measures of media-related conversations are used, like the mere frequency of such types of communication across time (Gehrau, 2013; Gehrau & Goertz, 2010).

Scholars like Friedland and colleagues (Friedland, 2001; Rojas, Shah, & Friedland, 2011) see communication as central for the emergence of social integration. But neither on the micro level of the individual nor on the aggregated level of society is the frequency of conversations a *direct* indicator of social integration. A person who is highly or well integrated may talk more or less frequently with other people about topics from the media. A high number of social contacts may generally go along with more interpersonal communication, but this may also depend on other factors, e.g., personality traits such as extraversion. On the macro level, the mere frequency of conversations about media topics is not a direct sign of a highly integrated society either, as the quality or topics of such conversations should matter as well. It seems likely that conversations about media can be observed for better-integrated individuals or societies, but conversations as such do not guarantee a high level of integration per se.

As mentioned in section 2.2 and in light of these difficulties when using conversations as an indicator of social integration, scholars may instead prefer to look at the integration of individuals into smaller settings, such as local communities and ethnic groups, but also interpersonal networks. The “storytelling neighborhood” study (Ball-Rokeach et al., 2001), for instance, shows how the use of local media can lead to increased engagement in conversations about the local community with fellow residents and ultimately further a sense of belonging. In this design, conversations and the integrative status of individuals are measured

separately. They are related, but the empirical analysis reveals frequency of conversations as a relatively weak predictor of attachment to a community. Leaving aside conversation-related constructs, more direct assessments of the integrative status of individuals are at the heart of the second branch of measuring media effects on social integration.

4.2 Social integration as a characteristic of individuals

Being well or less well integrated socially can also be seen as an inherent characteristic of people. Respective studies on the integrative status of people in their social surroundings usually do not examine their integration into the general society when analyzing media effects. Thus there are only a few approaches that measure the social integration of individuals per se. One of the few exceptions is Schulz (1999), who finds weak homogenizing effects of television use on personal values as well as political attitudes, using these dependent variables as indicators of integrative effects.

Most other studies consider select subdimensions of social integration as characteristics of individuals. Weiser (2001), for instance, sees social integration as a combination of “community and social involvement and social support strength” (p. 729). There is thus a network-related and an emotional side to social integration (and the network aspect may be linked to frequency of conversations, as discussed in section 4.1). In a similar vein, for measuring social integration on the level of local communities, McLeod and colleagues (1996) use people’s “interpersonal networks” within a local community as well as their “psychological attachment” to it as a place of residence as indicators of different degrees of social integration. Such different dimensions can be linked in different ways to the use of local media as well as conversations about topics from these outlets (Mahrt, 2008).

Apart from integration on the level of local communities, more general empirical analyses of social integration as an individual characteristic strongly overlap across different theoretical traditions. In this regard, it appears that a researcher’s disciplinary background determines which construct is used, while it can be hard to distinguish the respective constructs empirically, but also theoretically (Domahidi, 2016). Core neighboring concepts to social integration are *social capital*

in sociology and *social support* in psychology. Their theoretical underpinnings are introduced in the following, but it bears highlighting from the outset that they are closely linked to ideas about different degrees of social integration of individuals. Both concepts also, albeit in different ways, consider a network perspective as well as an emotional dimension, just as in the cited studies on integration on the local level. In contrast to the previously discussed approaches, however, they focus more on the *outcomes* of a larger or smaller network of contacts and stronger or weaker emotional attachment. This concerns the resources from which individuals can benefit due to their level of social integration.

The concept of social capital is in itself used across a wide range of fields and has known an equally large number of definitions (Adler & Kwon, 2002). It is linked to social integration because the “capital” that individuals enjoy derives mainly from their social relations. People with a large number of contacts and/or close ties to their family, friends, and acquaintances usually are able to generate more social capital. Thus the number and strength of their social ties is one aspect of their social capital. This could also be described as the embeddedness into a social network, which additionally links social capital to social integration. But social capital takes into account more than the position of an individual within a more or less large and more or less close-knit network. As mentioned above, it is also concerned with the actual resources that people can generate based on their integrative status, thus justifying the term “capital.” These resources can be material (e.g., borrowing money from somebody) or immaterial (information, moral, or practical support). While this is an important component of social capital, it is mostly implicit in discussions of social integration. But well-integrated individuals should enjoy a high level of social capital.²

Social capital closely overlaps with the second construct, social support, which is mostly studied in psychological research traditions (Domahidi, 2016; Trepte, Dielenlin, & Reinecke, 2015). It focuses less on people’s relations to others, but more on the different types of resources that come with these connections, as discussed for social capital. Being able to borrow money from a friend, knowing someone who

2 Some studies of social capital (e.g., Putnam, 2000) consider the macro level of society. But also on this aggregated level, a highly integrated society or community should have high levels of solidarity between its members, and thus high social capital should be observed. The opposite effect, however, may not necessarily apply.

could give someone a lift if they need it, or having a shoulder to lean on in emotionally difficult times are described as different forms of social support. These are, again, of course linked to a person's network of personal relations. Without family, friends, or acquaintances there would be no one from whom to receive these kinds of support. And with closer relationships, the individual would be more likely to receive support. Wellman and Frank (2001) even state that the more social capital an individual has, the more social support he or she can receive, which highlights the close relationship between the two constructs.

Like social integration, social capital and social support thus share, albeit in different ways, a dual perspective on individuals and their integrative status, including again their social connections and emotional closeness to other people (while their relationships with larger social entities are less important than in research on, for instance, integration in local communities). And also for social capital and social support, different dimensions can be distinguished. Social-capital research describes the difference between "bridging" and "bonding social capital," for instance, which refers to close versus looser relationships from which subsequently different kinds and amounts of resources can be received (Domahidi, 2016; Putnam, 2000). The literature on social support distinguishes between emotional, informational, and instrumental acts of support, which again can be expected from different kinds of relationships within an individual's social network (Trepte et al., 2015).

Close ties to other people could entail homogeneity in social groups and subsequently dissociation from other groups. Yet Williams (2006) shows that bonding social capital (which derives from support and other resources one can enjoy due to close relationships with other people) cannot be equated with such "out-group antagonism" (p. 605). He also finds that both dimensions of social capital are positively related: People thus tend to have both high (or low, respectively) bonding and bridging social capital at the same time. While one could assume that a high level of bonding social capital (which would derive from tight-knit, well-integrated relationships) would go along with homogeneous and closed social entities, which distance themselves from others (resulting in low-bridging social capital), this does not necessarily seem to be the case.

When comparing actual *scales* from research on social integration, social support, and social capital, the overlap between the concepts is even more pronounced: Williams (2006) uses items from a scale for social support to develop

measures of bridging and bonding social capital (but without discussing the theoretical ties between both constructs). In turn, Trepte et al. (2015) use items from Williams's scales to develop measures of social support. According to them, the difference between both constructs seems to lie in actual versus potential resources: They use social support to refer to actual acts of support received in the past, while social capital captures the *potential* to receive such support in general (Trepte, Dienlin, & Reinecke, 2013). Some studies on social integration use measures that strongly overlap with scales for social capital and social support (e.g., Heitmeyer, Kühnel, Schmidt, Wagner, & Mansel, 2013; Wensauer & Grossmann, 1996), while others, like the Sächsische Längsschnittstudie, a longitudinal study about the integration of East Germans from Saxony after 1990, may even use scales for social support to approximate social integration (Berth, Förster, & Brähler, 2004; Förster, Brähler, Stöbel-Richter, & Berth, 2012).

When scrutinizing how social integration as a characteristic of an individual is measured across a range of studies (beyond the confines of local communities or ethnic groups), this thus leads to social capital, which in turn leads to social support. As discussed above, from a measurement point of view, the three constructs cannot be entirely separated, as they rely on similar or even identical items to capture their respective subdimensions. This can be illustrated for one frequently used battery of items.

Williams (2006) has developed a comprehensive scale of bridging and bonding social capital for online and offline contexts. It contains ten items for each of the two dimensions. Bonding social capital refers to resources that can be obtained from close, trustful relationships, including different kinds of emotional, informational, and instrumental support (p. 602):³

There are several people I trust to help solve my problems.

There is someone I can turn to for advice about making very important decisions.

There is no one that I feel comfortable talking to about intimate personal problems. (reversed)

- 3 Williams (2006) includes "online" and "offline" in the items in order to compare social capital generated in online and offline contexts (e.g., "There are several people online/offline I trust to help solve my problems"). As this distinction is not relevant for the current discussion of the *dimensions* of social capital, social support, and social integration in general, these words are omitted here.

When I feel lonely, there are several people I can talk to.
If I needed an emergency loan of \$500, I know someone I can turn to.
The people I interact with would put their reputation on the line for me.
The people I interact with would be good job references for me.
The people I interact with would share their last dollar with me.
I do not know people well enough to get them to do anything important. (reversed)
The people I interact with would help me fight an injustice.

This scale for bonding social capital thus clearly overlaps with the construct of social support, as it contains many items referring to support that can be received in times of need. Some of these items are also shared with Heitmeyer et al.'s (2013) scale designed to measure social integration. A similar observation can be made for the second dimension, bridging social capital, which captures the feeling of belonging to or being oriented toward larger communities and the outside world:

Interacting with people makes me interested in things that happen outside of my town.
Interacting with people makes me want to try new things.
Interacting with people makes me interested in what people unlike me are thinking.
Talking with people makes me curious about other places in the world.
Interacting with people makes me feel like part of a larger community.
Interacting with people makes me feel connected to the bigger picture.
Interacting with people reminds me that everyone in the world is connected.
I am willing to spend time to support general community activities.
Interacting with people gives me new people to talk to.
I come in contact with new people all the time.

Whether or not one knows people with whom one feels connected is again also included in scales of social support. These are, on occasion, also interpreted as indicators of social integration, as in the Sächsische Längsschnittstudie (Förster et al., 2012).

The scales for bonding and bridging social capital also show that both dimensions are linked to conversations. As discussed in section 4.1, the frequency of talking to other people can be linked to the integrative status of a person, so these scales and related ones also share ideas with the measurements presented in the

previous section. However, in contrast to the respective studies discussed above, media are not directly included in this type of measurement of integration as an individual characteristic. This allows for the capture of more directly media-related phenomena, such as consuming or sharing media with other people or knowledge about topics from the media, independently from the degree of social integration an individual enjoys. It thus also becomes possible to study the relationships between the two.

Although Williams's (2006) scales have received criticism for confounding social capital with other indicators of social integration (Appel et al., 2014), they can be considered a standard instrument for studying the integrative status of individuals in connection with online use (Domahidi, 2016), which makes them even more pertinent for the present study. Both of their dimensions of social capital have in fact been shown in numerous studies to be positively connected to the use of social media platforms (e.g., Ellison, Steinfield, & Lampe, 2007; Valenzuela, Park, & Kee, 2009; Williams, 2006; Wilson, Gosling, & Graham, 2012). It remains to be seen, however, how they are related to the use of mass and editorial online media. This latter perspective is central to the third type of approaches to the measurement of media effects on social integration.

4.3 Fragmentation of audiences

The third type of measurement of social integration with regard to media originally stems from research on mass media, but has more recently been extended to the Internet as well. It usually considers integrative media effects on an aggregate level, rather than that of the individual users such as the measures introduced in the previous section. These studies approach social integration *ex negativo*, via a suspected *loss* of integration due to fragmentation (or related concepts, such as segmentation or polarization).

The discussion of fragmentation has different disciplinary roots that consider various sources for this phenomenon (Handel, 2000; Stark, 2013; Thomä, 2014; Webster, 2014): Some discuss fragmentation as social change, closely linked to concepts like individualization. A higher variety in people's media choices would be subsequently interpreted as an increasingly individualistic expression of per-

sonal taste, basic orientation, or social origin. This more sociological perspective is not meant by fragmentation in the present study. Neither is the development of a broader, more diverse media offering seen as fragmentation here. Instead, the current approach follows Handel's (2000) third dimension: Fragmentation denotes the phenomenon of decreasing audience sizes for individual media offerings. As members of smaller media audiences, individual users share fewer experiences and may have fewer conversational topics in common (as discussed in sections 2.1.1 and 4.1) and, following Vlašić's (2004) model, this could be detrimental for more macro levels of social integration.

It is clear that all three dimensions of the discourse about fragmentation are linked. A greater variety of media offerings, for instance, is a prerequisite of a more pronounced fragmentation of the media audience. On the other hand, media offerings will, in the long run, only be produced if there is an audience that uses (and directly or indirectly pays for) them. Individualization and audience fragmentation also mutually depend on one another. The drive to express one's personal preferences more individually in everyday life will also affect a person's media use. And consuming a unique set of media brings the users into contact with different selections of content and metamessages that can spread or reinforce different ideas, values, or priorities. Thus media use could increase tendencies of individualization. It is therefore difficult to identify the exact causes of audience fragmentation. There is, however, no doubt that audiences for media offerings have tended to become smaller over the last several decades. Yet there are a number of approaches to documenting this change, with different results.

Webster and Ksiazek (2012) distinguish three types of studies on the fragmentation of audiences: *Media-centric* studies focus on the size of the audience per medium. These studies can usually show dramatic differences in the popularity of media offerings and/or clear decreases over time in the use of formerly broadly popular media. However, such analyses can mainly discuss the economic side of fragmentation, as a question of market shares, for example. The social aspect is, on the other hand, considered in *user-centric* analyses. These take into account that people combine different media for a range of different purposes and often distinguish different types of users. Studies of social milieus or typologies of media users, for example, document how differently media are used by different social groups, depending on their resources and cultural or political orientation (Eisenblätter & Hermann, 2016; Mahrt & Begenat, 2013; R. Weiß, 2010).

In addition, the same media may be used in different settings or for different reasons, and consequently also the effects of this use may differ (Suckfüll, 2004). The resulting patterns of smaller and distinct audiences or audience groups has sometimes been called segmentation, to denote that there are not only more (and smaller) audiences, but that these differ systematically along a variety of social and personal factors.

Yet Webster and Ksiazek (2012) argue that also the user-centric perspective neglects important aspects, as it does not consider the media that could potentially have been used (the media-centric perspective). They instead suggest the *audience-centric* perspective that considers how audiences build around the media outlets on offer. This also allows for an analysis of audience overlap between different outlets, and it thus combines the two other perspectives. Their own analysis of 236 television channels and websites shows that overlap is a dominant pattern, meaning that even relatively small audiences *for a certain outlet* do not have to entail fragmentation, since the users of this outlet also consume many other media and are thus not isolated from the rest of the audience in general (see also section 7.1).

One area that usually follows such an audience-centric approach to fragmentation is related to political communication. Since information on political issues is typically included in a range of outlets, scholars are mostly not interested in the size of just one outlet. Instead, they consider sets of outlets that share characteristics, such as a focus on hard or soft news or a particular political slant. With regard to a potentially fragmented use of such type of media that carry political information and opinion, the term polarization is usually preferred to the more general concept of fragmentation (Hollander, 2008; J. K. Lee et al., 2014; Tewksbury & Rittenberg, 2012). Polarization studies typically describe differences in media use along political opinion and party preference and tackle the subsequent danger of deepening gaps between opposing political camps. This special case of fragmentation is seen in a distinctly negative light (in contrast to, for instance, individualization, which has a more neutral connotation), as it could make respectful discourse on political issues and compromise more and more difficult over time (Garrett & Stroud, 2014; Sunstein, 2007).

Like those on audience fragmentation in general, the contribution of polarization studies to an understanding of the relationships between media use and social integration is mostly concerned with an aggregate level as well. Many American studies, for instance, compare differences in media use between Demo-

crat- or Republican-leaning citizens and thus audiences of respective media outlets. Individual characteristics of respondents in a survey may be controlled for, but the discussion of polarization focuses more on proportions of usage of outlets with a distinct political slant or overlap between the usage patterns of opposing political groups.

Regardless of the approach to fragmentation chosen by scholars, studies usually describe audiences as more or less fragmented, yet a clear definition of the point at which fragmentation is present is missing. In fact, apart from mainly descriptive analyses, the literature on fragmentation as a threat to societal cohesion is often quite normative and concerned with worst-case scenarios (Jarren, 2000; E. Katz, 1996). A more neutral assessment of the effects of a diverse media offering, potentially fragmented mass media or online use, and social integration of individuals is missing.

4.4 Summary

Three ways of measuring integrative effects of media can thus broadly be distinguished, based on different theoretical traditions and research questions. Only some are directly targeted at media effects, mainly those that consider conversations about media as indicators of integrative media effects. This approach could, however, also be extended to knowledge from or awareness of media content. When conversations or knowledge about specific media or their content are measured, short-term variations can likely be assessed. The second approach captures the characteristics of individuals with regard to their connections with other people and therefore also their attachment to other individuals, groups, or larger entities. This approach has the advantage that the integrative status of individuals is measured independently from media use, which subsequently allows studying the relationships between both constructs. In light of the indicators used to measure such individual characteristics, these will likely be more stable over time than whether or not someone talks about media or knows about their content. Lastly, fragmentation is studied as an aggregate-level phenomenon. This area of research again includes different strands that look exclusively at audience sizes, repertoires of media users, or the use of political media only, which can also

be expected to vary relatively little over time. Again, approaches like these are open to analyses of relationships between audience fragmentation and outcome variables such as conversations, knowledge, content awareness, or others. But they also allow examining how fragmentation is related to the integrative status of individual media users.

In fact, while the fragmentation of audiences into smaller groups has been depicted in numerous studies (e.g., Jäckel, 1996; Napoli, 2011), analyses of such fragmented media use and its relationship with the integrative status of the users show mixed results, at least for the general population. It is mostly assumed that in the long run, a fragmentation of the audience would be harmful for social cohesion, yet empirical studies often find that despite more and more heterogeneous patterns of media use, people are still not less socially integrated (Stark, 2013). They still have topics to talk about with others, and they still see media as helpful in everyday social gatherings. On a smaller scale, scholars have shown how the frequent use of local (Mahrt, 2008; McLeod et al., 1996) or ethnic media (Trebbe, 2009; Vogelgesang, 2012) is positively linked to the integrative status of members of local or ethnic communities, respectively. As stated in section 2.2, there are more straightforward or direct operationalizations of integration on these levels than for society as a whole, which may explain why studies have been more successful in linking patterns of media use with social integration in these areas of research.

All of the research traditions presented in Chapter 4 approach social integration through the characteristics or behavior of individuals. With the exception of some studies on social capital, only fragmentation research typically also makes assumptions about more macro levels of integration. Given the state of the literature in this field, we can still only assume that if true *mass* media were to disappear or if the audiences of such media became smaller and smaller, the integrative functions for society in general (as discussed in section 2.1) could not be realized anymore.

There is thus a gap between mainly macro-level theoretical discussions of social integration and the small amount of findings that actually cover this aspect of social integration. Theories and approaches may be mostly concerned with the integration of a society or other social structures or entities (communities, social groups, organizations). Some of these may enjoy closer links between their members on the individual level than others. But with regard to media, approaches are missing that link the status of individuals as more or less well integrated to de-

degrees of connectedness of the society or group they belong to—as a feature of the society or structure discussed, not a characteristic of their individual members.

The overview in the current chapter also shows that it is advisable to select measures that allow capturing the integrative status of media users and potential outcomes of this use separately. Studies on local communities, integration of their members, and their media use show that these are related—but not very closely. It thus seems sensible for future studies to select nuanced measures that help disentangle the relationships between media use, integrative status of users, and potentially also outcome variables such as conversations about media, or awareness of media content. These could serve as a link between media use and a person's level of integration.

Some of the discussed measurements already have been successfully applied to the study of online media and the integration of their users. This concerns, for instance, research on social capital (Williams, 2006) or audience-centric studies of the fragmentation of Internet users (Webster & Ksiazek, 2012). Studies on conversations in the online era, however, typically do not distinguish between conversations about online media or their content and mass media. Comparative work on these factors may thus be a valuable addition to the field.

5 How to analyze the integrative potential of the Internet

The previous chapters document the heterogeneous literature on the effects of the Internet for social integration as well as the prominent place dystopian assumptions about future developments hold within it. The present study aims at bringing together some of the different strands of this heterogeneous field of research in order to assess more objectively, and to a certain degree more comprehensively, what integrative potential the Internet, online content, and use may have. Before outlining the specific aims and the scope of the study (section 5.2), open questions from the previous discussion of integration and media, in particular the Internet, will be summarized.

5.1 Open questions

Given the long tradition of research on media and integration and the inclusion of integrative media effects as almost self-evident in many fields of research, it is striking that so little is known about the contributions of different media to social integration. The discussion of a possible fragmentation due to multichannel television (see section 2.3), for instance, does not consider the use of other media that could mitigate effects on integration due to a changing TV-viewing behavior. Likewise, the ongoing discussion about online fragmentation tends to ignore that hardly any online users have stopped using traditional mass media in their entirety. It is thus an open question how media fare in comparison to one another with regard to the effects of their use on the integration of individuals. Given the lack of comparative research, it is possible that a medium at the center of critical discussion (like multichannel television, the Internet in general, or specific platform types like social network sites) does not turn out to be that bad for society after all.

A similar blind spot in integration research concerns the role of media content. As discussed in sections 2.1.2 and 2.1.3, studies tend to consider entertaining

media content (as in cultivation research, for instance) or information (e.g., in agenda setting studies). While cultivation and agenda setting are quite different approaches to media effects, the processes underlying the respective integrative effects of media use are similar. In both cases, repeated exposure to consistent media messages is expected to result in shared perceptions of media and social reality. However, such effects of entertainment *and* information use are rarely studied side by side. Likewise, studies on selective exposure to media often consider only one type of content, entertainment or information (see section 2.3). It thus remains to be seen what types of content have what specific and relative integrative effect.

With regard to digital fragmentation, many studies focus on niches in which segmented or even politically polarized audiences can form (Chapter 3). But when and how do such niches emerge? And could online use, due to the increased amount of outlets and easy ways to access varied content, also lead to a broader awareness of content and topics? How do different types of content or different topics fare in this regard? Some online content items, such as viral memes (section 3.2), are very successful in reaching a relatively high visibility at a certain point in time so that seemingly endless variations can be created for humorous effect. But how do such items compare to other types of online content—or content from mass media? And thus, what is the integrative potential of viral online content?

Taken together, these questions point to the role that characteristics of media offerings may play for a fragmentation of audiences and thus for the integrative potential of the respective media. The number of available offerings, methods of technically accessing them, and typical kinds of content of a medium may influence what audiences form around this outlet. This has been referred to as the “duality of media” (Webster, 2011): The structural features of media set boundaries within which users can act, by selecting or avoiding offerings. Most of the questions so far center on the role that particular kinds of structures play for usage, because this usage may ultimately be related to the integration of individuals and, lastly, society.

A last cluster of questions concerns more general aspects of social cohesion, starting with the integration of users. Given the wide variety of measures used across different fields of research to capture their level of integration (see Chapter 4), can the equally diverse findings be harmonized somehow? How are differ-

ent measures of an individual's integrative status and integrative media effects related to each other? How much does it matter for the results of a study which aspects of integration are covered? These questions are largely unanswered, and there is thus a need for research that tries to more clearly distinguish between the integrative status of individuals, their behaviors (including media use and conversations about media, for instance), as well as more direct integrative media effects, for example on content awareness (see section 4.4). This would also allow examining the relationships between possibly different findings and different indicators of integrative media effects from the past.

What lastly remains unknown, is how, following Vlašić's (2004; see introduction to Chapter 2) model, higher levels of integration profit from integrative media effects on lower levels. The integration of individuals and the level of integration their society enjoys depend on each other, yet this has not been studied empirically (see section 4.4). As stated in section 2.2, such processes have to be assumed to stretch across many media outlets, with diverse messages on a wide range of topics, and longer periods of time. It is therefore no wonder that only some suggestions for research designs on this problem exist (Jarren, 2000; Schönhagen, 2000; Vlašić, 2004), but no actual studies.

Not all of these issues can be tackled by a single study, of course. But the summary of the open questions on integration, media, and the Internet in particular shows more systematically which areas require further inquiry. The following section gives an overview over the aim and scope of the present work.

5.2 Aim and scope of the study

As is the case with most analyses on the relationship between media and social integration, the present study focuses on the micro level of the individual, which is assumed to be a basis and prerequisite for more macro levels of integration. The study intends to shed light on the relative contribution of different media (in particular the Internet), types of media content, and forms of media use on social integration. Taken together, this should allow the *integrative potential* of the Internet to be more clearly determined. In light of the previous chapters, the technical features, typical content, and styles of online usage all influence what

integrative effects the Internet can unfold. To what degree this *integrative potential* is actually realized under everyday circumstances is the central question of the study. To form a baseline for possible media-specific integrative effects, the integrative potential of traditional mass media such as television, newspapers, and radio is assessed in order to be able to compare it, in a second step, across media and third, with that of online offerings. Media with a high integrative potential should be linked to a higher integrative status of their users, stronger effects on, for instance, shared awareness of its content, and/or more overlap instead of fragmentation among its users.

Social integration is thus approached on the micro level, as the status of an individual within social contexts, from close relationships, to acquaintances. For the closer interpersonal contexts, this perspective overlaps strongly with the concepts of social capital and social support (see section 4.2), and it combines both the structural integration into interpersonal networks with weak and strong ties as well as the emotional connection to these social surroundings. Given the rich research tradition on social capital, it is hoped that this approach, albeit not covering all possible meanings of “social integration,” may at least alleviate the long-standing problems of transferring the concept into empirical research (Jaren, 2000; Schönhausen, 2000). It should also allow for a discussion of the contribution of media to social integration beyond more specific questions about the integration of ethnic minorities or local communities.

The study thus focuses on the basic level in Vlašić’s (2004) model of media and integration (see Chapter 2): Media provide people with topics to talk about and are frequently embedded in everyday social contexts. This requires at least some people to actually use media before their content can become part of conversations. What will be examined in this regard is threefold: First, different media will be compared. Which media are particularly successful in reaching a broad audience with their content, either directly or through conversations? Second, the role of different types of content will be compared. Some types of media content, like news, appear in many different media, while others such as television series or viral video clips typically belong to one medium and may be mentioned in others, but not received via the latter as such. Third, media use in content-wise fragmented online environments will be studied. This concerns both the typical patterns of online use and the content structures that users encounter on online platforms. This third aspect will be studied for two popular

and content-heavy websites, the online video platform YouTube and the news site Spiegel Online.

Through investigating relationships between individuals' media use and integrative status, this study strives to assess and compare the integrative potential of different media. In particular, the role of online platforms is of interest here. What role do Internet use and more specific types of platforms play, e.g., platforms with options for customizing the content to be displayed? On the one hand, these could lead to a more restricted uptake of content and, subsequently, loss of touch with the mainstream of current topics. On the other, incidental exposure to news does happen via customized platforms such as social network sites (Bode, 2016; J. K. Lee, 2009), so it remains unclear what the impact of such platforms currently is—and may possibly become if people continue to use such sites more.

Studies on fragmentation due to increased television offering have not revealed clear-cut social changes (see sections 2.3 and 4.3), and social change due to increased online use or use of specific platforms is thus not expected to happen acutely. Yet if differences between traditional mass media and online platforms can be observed, it seems likely that the relationship between media and social integration on the micro level may change in the future. The analysis of current patterns of usage, content, and integrative media effects should thus allow for some cautious prognoses.

This study is composed of three main parts: A survey deals most directly with the integrative effects of online and traditional media (Chapter 6). It looks at the relationships between media use, integrative status of a person, and awareness of media content as a dependent variable. In a second step, types of users are distinguished to compare the effects of different media repertoires. In both perspectives, differences between traditional mass media and online platforms are examined.

The survey is complemented by an analysis of clickstream data from two popular websites (Chapter 7). Online use is so complex and varied that a survey can only cover it rather loosely. But some conclusions about audience overlap in the online era (in particular those by Webster & Ksiazek, 2012) may only apply to the level of websites. For large websites with huge amounts of content available, integrative potential would be realized if particular *content items* actually manage to bring large audiences together, not if people simply come into contact with the same technical platform. To what degree this happens is examined for an online video site, YouTube, and an online news magazine, Spiegel Online.

Lastly, the content structures of YouTube and Spiegel Online are analyzed via a content analysis to illustrate how structures may influence users in their selection behavior, and thus the integrative potential of the respective sites. Both their content offering as well as their technical features are important to understand what integrative effects different types of content and platforms can be expected to exert (Chapter 8).⁴ Research questions and hypotheses for all three parts of the study are introduced in the respective chapters.

The integrative potential of the Internet relative to other media is examined with a focus on Germany. The country has a two-fold tradition of research on integration and media. On the one hand, a more theoretical discussion of social integration (and the media's contribution to it) concerns mainly the macro level of society (Peters, 1993; Trebbe, 2009). On the other hand, the fragmentation of media audiences has been studied from numerous angles (Stark, 2013), given that Germany's media system has seen a considerable expansion, in particular with regard to television stations and magazines on offer (Mahrt, 2010). An average German currently spends 9.5 hours per day using media, with television (208 minutes per day), radio (173), and the Internet (107) leading the way (Engel & Breunig, 2015). About 80 percent of the population use the Internet at least from time to time and 43 percent say that it has become an integral part of their daily lives (Frees & Koch, 2015).

While radio and newspapers are more local media, national channels are most popular on television. The largest audience shares are currently observed for public-service broadcasters ARD (11.6%) and ZDF (12.5%) as well as commercial channels RTL (9.9%), Sat.1 (7.9%), ProSieben (5.3%), and VOX (5.1%; Zubayr & Gerhard, 2016). These offer a variety of genres, of which crime dramas and live sports (in particular soccer) are among the most popular.

With regard to online use, among the most popular media-related online activities and platforms are searching for information (76%), e.g., via search engines, reading articles about current events (59%), watching videos (53%), looking up things in Wikipedia (45%), and using social network sites like Facebook (34%; Frees & Koch, 2015). Watching online videos is currently on the rise, with

4 An analysis of the effects of algorithms on selection of content is, unfortunately, reserved to platform providers (Gillespie, 2012; Thorson & Wells, 2016; Wells & Thorson, 2017) and thus beyond the means of the current study.

about a quarter of all online users accessing some form of audiovisual content daily (Egger & van Eimeren, 2016; Kupferschmitt, 2015). The platforms used for audiovisual content are diverse, from video sites like YouTube to live streaming and archives of television stations, or video-on-demand services like Netflix. Among the most popular websites overall figure dominant international brands like Google, YouTube, and Facebook. With regard to editorial content, the websites of print brands Bild (a tabloid newspaper) and Spiegel (a weekly news magazine) are among the most popular offerings.⁵

While some television channels and online media thus reach a large number of people in Germany, there are still some fault lines that divide users and non-users for other media outlets. Online use is still markedly less frequent among older age groups than younger ones (especially for 60 year olds and over) and unemployed or retired people, while women continue to use the Internet slightly less frequently than men (Frees & Koch, 2015). Younger people read (printed) newspapers much less frequently than older groups, a trend that is intensified according to the succession of age cohorts (Best & Engel, 2016). The amount of time spent watching television differs across age, gender, education, and residence in East or West Germany (Zubayr & Gerhard, 2016), and some of these variables also affect the use of TV genres as well as channels (Media Perspektiven Basisdaten, 2015).

Given these differences, overall media repertoires (Hasebrink & Domeyer, 2012) and information repertoires (Hasebrink & Schmidt, 2013) also differ, as a variety of combinations are common among different social groups. While milieu-based studies and typologies of media users (Eckert & Feuerstein, 2015; Eisenblätter & Hermann, 2016) describe typical combinations of basic attitudes and circumstances as well as media use, this study will look more closely at how such combinations affect what *content* actually reaches different types of media users and how this is related to their integrative status. A systematic comparison between outlets, in terms of use and received content, should allow determining the integrative potential of the respective media.

5 According to <http://www.alexa.com/topsites/countries/DE> as well as <http://ausweisung.ivw-online.de> (11 April, 2017).

6 Survey: Media use and social integration⁶

Questions about the contribution of different media to the social integration of individuals are central to this study as they should ultimately help to determine the integrative potential of the media in question. Depending on their reach and typical types of content, each medium should have a different chance to contribute to, but also diminish social integration (see section 2.4). In this regard, differences between the Internet and traditional mass media are examined as its content may typically reach smaller audiences, while some online platforms provide the opportunity to distribute a much larger variety of content from many different sources than any mass medium (see section 3.5).

Of course, most people who use online media continue to use other media as well, so online use is studied in comparison with the use of traditional mass media. The analyses in the current chapter also look at the integrative *effects* of the use of different media, by using two different measures of social integration of individuals (following the discussion summarized in section 4.4).

Questions about these issues can be addressed most directly via examining people's media use, their integrative status, as well as more short-term indicators for integrative media effects. To do this, the study follows approaches discussed in sections 4.2 and 5.2 that treat integration as an individual characteristic. The analyses thus focus on the individual level, by examining the integrative status of a person, both with regard to their place in a network of loose and close ties as well as their emotional attachment to this network. As outlined above, this perspective on social integration overlaps with the concepts of social capital and social support. On the one hand, relationships between an individual's integrative status and media use behavior are examined to test whether the assumptions made in section 2.4 are true. On the other hand, the integrative potential of different media is also studied through their ability to make large groups of people aware of the same content, be it news about current events or also entertaining media products.

6 An earlier version of the analyses introduced in section 6.2 was presented at the 2016 annual conference of the German Communication Association (DGPK) and has appeared in the conference proceedings (Mahrt, 2017a).

To examine media and the integration of individuals, survey data are used. Following a summary of the data collection process, the analysis centers on two aspects that are introduced and discussed with respective research questions and assumptions in sections 6.2 and 6.3.

6.1 Method

To assess individuals' integrative status, media use, and awareness of media content, an online survey was conducted via the provider Respondi (the questionnaire is documented in Appendix A). A pretest was run in September 2014 to test the questionnaire and scales used in it, develop appropriate categories for some variables (e.g., typical ranges for the number of contacts on social network sites popular in Germany at the time), and assess the typical level of awareness of a range of media content items.

The main survey was run in the first week of December 2014, using a quota sample representative for the German population aged 18–69. After eliminating participants for response set, a sample of 1,739 respondents remained. Of these, 51 percent are female and 49 percent are male, a difference of one percentage point to the intended quota. Young males aged 18–29 are slightly underrepresented (-2.2 percentage points) in the final sample, as response set was particularly frequent in this group. With regard to education, low education is underrepresented (-1.9 percentage points), while high education is overrepresented (+2.5 percentage points). High income individuals, with a monthly household income of €3,000 or more, are also slightly less frequent than intended (-1.9 percentage points). Overall, the quotas for basic demographics are thus satisfactorily met.

As a first indicator of integrative media effects, *awareness of media content* is assessed. As discussed in section 4.4, this is an extension of the research approaches that have used conversations about media as a measure of integrative media effects. Content awareness should be influenced by media use (and is therefore treated as a dependent variable), and it also possibly depends on a person's integration within interpersonal networks. Interpersonal contacts play a role because conversations with other people may indirectly lead to awareness about what has been featured by media a person has not used themselves. This study, however, is not primarily inter-

ested in the integrative effects of *conversations*, but of media and their content. Thus, it does not matter in the current context whether awareness arose second-hand from conversations or directly from media use. But by measuring content awareness instead of conversations or similar indicators, its relationships with media use can be examined as well as its potential dependence on a person's integrative status.

In the operationalization of content awareness, the study uses a different route than other research traditions such as agenda setting: Respective studies typically employ open questions about what topics people find important. Such a design usually necessitates a rather high level of aggregation in the analysis of respondents' diverse answers to construct overarching issues that are not related to individual media content items anymore (Kosicki, 1993). As stated in section 4.1, this may even be one of the reasons why studies on integrative media effects that use aggregated conversation-related measures have so far resulted in mixed findings.

Instead of open questions about media content respondents remember or broader issues, the current study measures content awareness as recognition of a selection of topics. In order to assess the specific integrative potential of different media, their typical types of content, as well as their different audience sizes (see sections 2.4 and 3.5), a variety of media content items were selected for the survey. This should allow, among others, to compare how online content fares relative to mass media content.

During the two weeks prior to the start of the survey, news outlets, television ratings, and online charts were monitored for prominent or popular content items. The pretest earlier in the year had provided an estimation of what general level of awareness one can expect for, e.g., front page news, successful TV shows, or videos from YouTube and other social media charts. As news and television entertainment were expected to reach the highest levels of recognition, a smaller selection was chosen. To control for actual awareness of content, a fictitious news item ("YOLO is youth word of the year") and a television show that had been broadcast months earlier (Celebrity Big Brother) were also included. Answers to these items were considered in the data cleaning process. Originally, two soft news items and two non-fictional TV programs were also included, but these have been omitted from the following analyses in order to restrict awareness of content to one type of content per medium.

In the end, seven hard news items were presented that had received different levels of attention, being featured on the front pages of the broadsheet

Süddeutsche Zeitung or tabloid paper Bild, in the main TV news program Tagesschau at 8 p.m., or in the Google News top headlines (see Table 1 for the selected media content items). Most news referred to short-term and recent events. The Ferguson unrest, on the other hand, had been going on for several months at the time of the survey, but violent protests in late November raised the topic in the German news agenda in the week prior to the survey.

Table 1: Selected media content items and their level of salience

Content	Salience in media
<i>News</i>	<i>Featured in</i>
Violent protests in Ferguson, MO (USA)	Süddeutsche Zeitung, Bild, Tagesschau, Google News
Swiss people vote in referendum against law supposed to limit immigration	Süddeutsche Zeitung, Tagesschau, Google News
Federal parliament debates zero-deficit budget	Tagesschau, Google News
Study reveals faults in school food	Süddeutsche Zeitung
Federal Administrative Court imposes limits on work on Sundays	Bild, Tagesschau, Google News
Motion of censure against President of the European Commission Jean-Claude Juncker	Tagesschau
Computer virus “Regin” spies on ten countries	Süddeutsche Zeitung
<i>TV entertainment</i>	<i>Ratings in millions (14–49 years old only)</i>
<i>Pirates of the Caribbean</i> (movie; ProSieben)	n.a. (1.38)
<i>The Hobbit: An Unexpected Journey</i> (movie; RTL)	4.47 (2.87)
Die 2 – Gottschalk & Jauch gegen alle (quiz show; RTL)	3.89 (1.36)

Tatort: Die Feigheit des Löwen (crime drama; ARD)	9.18 (2.88)
Das große TV total Turmspringen (entertainment program with diving contest; ProSieben)	n.a. (1.41)
Champions League Leverkusen : Monaco (live soccer match; ZDF)	5.05 (1.33)
Das Adventsfest der 100.000 Lichter (variety show with Schlager music; ARD)	5.78 (n.a.)
<i>Online content</i>	<i>Level of popularity</i>
A woman walks the streets of NYC for ten hours (youtube.com)	37 million views at the time
Rechts gegen Rechts – satirical activism against neo-Nazis in small German town (youtube.com)	YouTube Top 10, 1.4 million views
<i>Jurassic World</i> – Trailer (youtube.com)	YouTube Top 10, 9.5 million views
Parents use a smartphone for the first time (list of pictures, heftig.co)	Top ranking on 10000 Flies, 185,000 likes and shares
Satirical news article about deer being required to wear safety vests to avoid traffic accidents (der-postillon.com)	Top ranking on 10000 Flies, 92,000 likes and shares
Grandmothers try marijuana (youtube.com)	YouTube Top 10, 16.9 million views
Campaign against TTIP agreement: Shadow jurisdiction for large corporations (campact.de)	Top ranking on 10000 Flies, 48,000 likes and shares
LeFloid: On bird flu and Ken Jebsen (youtube.com)	YouTube Top 10, 700,000 views
Gronkh: Let's play video of "The Evil Within" (youtube.com)	YouTube Top 10, 238,000 views
Dagi Bee styles her boyfriend (youtube.com)	YouTube Top 10, 633,000 views

n.a. = not available

For TV entertainment, ratings were registered daily via the website dwdl.de. Seven popular movies, entertainment shows, and one live soccer match were selected that had aired on four of the most popular stations in Germany (Zubayr & Gerhard, 2015). Again, the level of visibility varied, with some programs being generally popular, others, particularly among the main target audience of 14 to 49 year olds. Since some of the movies were older, respondents were asked if they remembered seeing the TV programs or at least parts of them in the previous week. They were not asked for general recognition or earlier viewership.

The popularity of online content had proved most difficult to estimate in the pretest. Prior to the main investigation, online trends were monitored via the daily YouTube trends in Germany as well as the website 10000 Flies, which assesses popularity of content from a variety of sources via the number of positive evaluations, links, and comments on the social media platforms Facebook, Twitter, and Google+. The items ranked as popular by 10000 Flies also contain news or content from websites of TV stations related to their programs. For the purpose of the survey, “online content” was defined as content stemming from websites that had no offline counterpart (such as a printed newspaper or TV station) and that did not only report on current events. Nine such online items were selected, most of them entertaining. As the pretest had shown that the level of awareness for such content is comparatively low, one viral YouTube video from October 2014 was added, which had been viewed 37 million times globally at the start of the survey. It shows a woman walking the streets of New York City and being addressed by a large number of male strangers throughout a single day. For all 24 content items, respondents indicated whether they remembered seeing the item in question or not or whether they were not sure. The TV and online content items were accompanied by a screenshot from the respective program or website. For each of the three types of content (news, TV entertainment, online content), the number of definitely recognized items was summed.

The second indicator of social integration is based on the *integrative status* of individuals, and thus treats integration as a characteristic of a person. As discussed in section 4.2, this allows assessing relationships between integration and media in such a way that the measurement of integration as an individual characteristic is fully independent of the respective person’s media use. The more or less well-integrated status of respondents was measured via

their bridging and bonding social capital.⁷ The respective scales developed by Williams (2006) were used (see section 4.2 for details on the scales). Two negative items were reversed before submitting the items to principal component analysis, which resulted in two factors with high reliability (Cronbach's alpha for bridging = .92; for bonding = .90).

The central independent construct *media use* was assessed via the frequency of using television, radio, printed newspapers, printed magazines, the Internet in general, and social network sites, from 1 = *never* to 6 = *daily or almost daily*. Since the Internet can be used for many different purposes, additional information was collected on how much respondents relied on online sources for information and entertainment. Using the same scale of frequency as for media use, the use of the following types of platforms for *information about news and current events* was assessed: online newspapers, online news magazines, websites of TV stations, websites of radio stations, e-mail portals (such as t-online or gmx.de), social network sites, the online encyclopedia Wikipedia, blogs, search engines, and RSS feeds. For entertainment or passing the time, respondents indicated the frequency of using websites of TV stations (including video archives), online video platforms (such as YouTube or Vimeo), listicles (often humorous lists of pictures and short texts, as featured on Tumblr or BuzzFeed, for instance), blogs, and social network sites. These two lists are only a selection of the available online sources for information and entertainment, respectively. Yet they should cover the most popular types of platforms at the time of the survey, according to sites like alexa.com, IVW online, and also surveys (Busemann, 2013; Frees & Koch, 2015).

As summarized in section 3.5, the different platforms and practices that make up online use could have different integrative effects. The current survey focuses on social network sites, which are important content distributors (Thorson & Wells, 2016) and popular online destinations in Germany (Frees & Koch, 2015). As previous studies have shown (see section 3.4), the number of contacts users have on social network sites as well as the diversity of their networks may influ-

7 In an alternative attempt to measure the integrative status of individuals in a national sample, three items were adapted from the ALLBUS survey that measure closeness with one's town or city, state, and country as a whole (included, for instance, in the 2014 ALLBUS questionnaire; GESIS - Leibniz-Institut für Sozialwissenschaften, 2015). Yet the variance for these three variables was so low that they were excluded from further analysis.

ence what content they see within the site. To account for the *structure of contact networks* on social network sites, such information was obtained for Facebook, the most popular social network site in Germany (Busemann, 2013).⁸ Respondents who used this platform were asked for their number of contacts (“friends”), in the following categories: 0; 1–20; 21–50; 51–100; 101–150; 151–200; 251–500; more than 500. The categories were chosen to achieve a more or less even spread, based on the distribution of open answers in the pretest. Respondents also rated how much the people they typically interact with on Facebook share the same or hold diverse attitudes, from 1 = *very much alike* to 5 = *not at all alike* (the item was adapted from Heitmeyer et al., 2013).

As outlined above, integration and media use are studied on the individual level, which raises the question of potential intervening variables. Demographic information was assessed for the quota sampling at the outset of the study. The pretest had additionally not only shown that news had the highest level of awareness overall, but that both recognition of news and use of different media were correlated with *interest in current events*. To be able to assess the specific contribution of media use to content awareness, interest in current events (from 1 = *not interested at all* to 5 = *very interested*) was thus gauged as one item from a longer list of media content.

6.2 Relationships between media use and integration

The first part of the analysis of survey data explores the integrative potential of different media via relationships between content awareness, individual media use, and the integrative status of a person. Awareness of media content is used as a dependent variable and serves as an indicator of basic integrative media effects—while the integrative status of a user is entered independently in the analyses. The summary of integrative media functions provided in section 2.4 underlined that through their ability to reach large audiences, their content, which often covers socially relevant issues but also in general contributes to a shared

8 Similar questions were asked for Twitter, but due to the small number of Twitter users in the sample, these data are discarded in the following analysis.

perception of reality, media can have a smaller or larger integrative potential. That people use these media and come into contact with their content is understood here as a prerequisite for integrative media effects (including indirect effects on non-users who may hear about media-related topics from others—and media that achieve this would have a larger integrative potential than those that do not). Content awareness in this regard is only concerned with whether or not people know about topics from the media. It does not cover what they know, think, or feel about these topics. And it does not consider through which channels people learned about the topics, either. As was discussed in section 4.1, the frequency of conversations about media topics has not been an entirely useful indicator of the integrative potential of media. Talking about topics from the media is therefore not included in the present study, which remains restricted to awareness of media content to test the usefulness of this alternative indicator.

Content awareness should depend on different factors of which two will be examined. For one, the use of different media is compared. If traditional mass media have—and realize—integrative potential, their use should be related to the level of content awareness among users versus non-users (in spite of possible indirect effects through interpersonal communication). In addition, differences between online and mass media use are assessed. If the Internet lacks integrative potential or even has detrimental effects on social integration (see Chapter 3), this should lead to a lower awareness of media content among online users.

RQ1: How does online use differ from traditional mass media use with regard to awareness of media content?

Online use encompasses many different activities and platforms, which may have different integrative potentials (see section 3.5). Not all of them can be considered in a single study. Given the central role social network sites play for many users (Busemann, 2013; Duggan, Ellison, Lampe, Lenhart, & Madden, 2015; Frees & Koch, 2015) and the questions raised about these platforms with regard to filter-bubble effects (e.g., Bakshy, Messing, & Adamic, 2015; Bright, 2016; Y. Kim et al., 2013; J. K. Lee et al., 2014; Pariser, 2011; Wells & Thorson, 2017), the use of social network sites is examined in greater detail. Instead of presenting a more filtered, more homogeneous selection of content, such platforms can, on the contrary, also distribute a large variety of topics and sources and thus bring heterogeneous

content to the attention of their users. Instead of hypotheses, the relationship between the use of social network sites and content awareness is examined following two open questions.

RQ2: What role do social network sites play? Do they increase or decrease the amount of media content users are aware of?

The second aspect of the integrative potential of media is studied through typical media content items. News and television entertainment are examined for their homogenizing, integrative effects on agenda setting and cultivation research, respectively, yet they are hardly ever compared (see section 5.1). Both can, of course, also be distributed via online channels. But there is other content that is more typical of online environments: short video clips, often user-generated; memes and other humorous content; and other messages specifically tailored for sharing online. Some of these become relatively popular (or even go viral, are seemingly everywhere at a given point in time), but what this actually means in terms of general awareness of such content remains unknown. Awareness of popular online content items is thus explored.

RQ3: What role do different types of media content play for content awareness? Are popular online content items comparable to more traditional media content?

As stated above, awareness of media content is considered as the *result* of different factors. Beyond media use as a direct source, the social context of a person is likely to influence content awareness as well. In contrast to previous studies (Gehrau, 2013; Haas & Brosius, 2013; J. K. Lee, 2009; Tewksbury & Rittenberg, 2012), awareness of topics from the media is thus not used as an *indicator* of the integrative status of a person, but as a potential *outcome*. How many topics from the media people are aware of should depend not only on their media use, but also on their embeddedness in social contexts, where people frequently talk about a range of topics. So the integrative status of a person should be linked to content awareness. Inclusion of individual integrative status also allows exploring the relationship between integrative status and media use, and, if necessary, controlling for it in other analyses.

It can be assumed that awareness of current media content is more volatile than (often habitual) media use or even more so, integration in social contexts, which have both been shown to be rather stable over time in a study on media use and integration on the local level (Hoffman & Eveland, 2010). While the current study is cross-sectional and no developments over time can be determined, it nonetheless appears sensible to regard content awareness as a dependent variable and use integrative status and media use as independent variables. As discussed in section 6.1, the present analysis of an individual's integrative status draws on research on social capital and use of social network sites, by examining relationships between media use and two facets of integration in personal networks: bonding, the integration in a small network of close ties that offer high levels of material and immaterial support; and bridging, related to a larger network of looser ties that are open for new information, but do not offer as much support in times of need.

RQ4: What role does the integrative status of a person play for awareness of media content? Do bridging and bonding social capital make a difference?

The research questions are studied through multivariate analyses controlling for demographics and interest in current events.

6.2.1 Results

The level of awareness for the 24 selected media content items presented in section 6.1 varies considerably, from 79 percent for the Ferguson unrest and about four percent for a fashion tutorial from the YouTube top 10 (Table 2). With one exception, news items are recognized more frequently than TV programs or online content. The latter generally receives the lowest level of awareness. On average, respondents recognized 4.0 out of seven news items ($SD = 1.8$), 1.7 out of seven TV programs ($SD = 1.3$), and only 1.1 of the ten selected online content items ($SD = 1.4$). Awareness for online content was highest for the viral video, with about a quarter of the respondents recognizing it. Apart from this one, content identified as popular by 10000 Flies enjoyed higher levels of recognition than three videos from the YouTube charts, although these were posted by YouTube users with several millions of subscribers each (users LeFlord, Gronkh, and Dagi Bee).

Table 2: Awareness of media content

Content	Level of awareness (%)
<i>News</i>	
Violent protests in Ferguson, MO (USA)	80
Swiss people vote in referendum against law supposed to limit immigration	70
Federal parliament debates zero-deficit budget	61
Study reveals faults in school food	59
Federal Administrative Court imposes limits on work on Sundays	57
Motion of censure against President of the European Commission Jean-Claude Juncker	49
Computer virus “Regin” spies on ten countries	15
<i>TV entertainment</i>	
<i>Pirates of the Caribbean</i> (movie; ProSieben)	40
<i>The Hobbit: An Unexpected Journey</i> (movie; RTL)	34
Die 2 – Gottschalk & Jauch gegen alle (quiz show; RTL)	24
Tatort: Die Feigheit des Löwen (crime drama; ARD)	23
Das große TV total Turmspringen (entertainment program with diving contest; ProSieben)	22
Champions League Leverkusen : Monaco (live soccer match; ZDF)	22
Das Adventsfest der 100.000 Lichter (variety show with Schlager music; ARD)	9
<i>Online content</i>	
A woman walks the streets of NYC for ten hours (youtube.com)	24
Rechts gegen Rechts – satirical activism against neo-Nazis in small German town (youtube.com)	16

<i>Jurassic World</i> – Trailer (youtube.com)	16
Parents use a smartphone for the first time (list of pictures, heftig.co)	12
Satirical news article about deer being required to wear safety vests to avoid traffic accidents (der-postillon.com)	12
Grandmothers try marijuana (youtube.com)	10
Campaign against TTIP agreement: Shadow jurisdiction for large corporations (campact.de)	6
LeFlويد: On bird flu and Ken Jebsen (youtube.com)	5
Gronkh: Let's play video of "The Evil Within" (youtube.com)	4
Dagi Bee styles her boyfriend (youtube.com)	4
n	1,739

Table 3 shows correlations between content awareness aggregated for the three types of content as well as media use and integrative status of the users. Overall, relationships between these variables tend to be positive, with high media use across all traditional media and a large personal network (bridging) being related to frequent use of the respective other media. With regard to content awareness, most correlations with media use are positive as well. This can be expected, for instance, for frequency of watching television and awareness of recent TV programs or reading newspapers and recognizing current news items. With regard to RQ1, however, interesting patterns emerge for online use. There is a weak (positive) relationship between general Internet use and awareness of news items, but no correlation with awareness for the two other types of content. Of course, using the Internet encompasses many different types of behaviors and platforms, so the low level of association with content awareness could be due to this heterogeneity not being accounted for in the current study.

For social network sites (RQ2), a different picture is apparent than for general Internet use. Using these platforms frequently is negatively related to recognizing news items, but positively to awareness of entertaining TV programs and online

Table 3: Correlations (Pearson's r) between media use, integrative status, and content awareness

	Frequency of media use				Integrative status			Content awareness		
	Radio	News- paper	Maga- zine	Internet	SNS	Bonding	Bridging	News	TV enter- tainment	Online content
TV	.157***	.136***	.105***	.109***	n.s.	.060*	n.s.	.129***	.157***	-.087***
Radio		.289***	.207***	.089***	n.s.	.120***	.137***	.210***	.081**	-.068**
Newspaper			.529***	n.s.	-.061*	n.s.	.111***	.317***	.139***	n.s.
Magazine				n.s.	n.s.	n.s.	.166***	.218***	.148***	.060*
Internet					.103***	n.s.	.057*	.097***	n.s.	n.s.
SNS						.092**	.163***	-.087***	.144***	.298***
Bonding							.470***	.118***	.105***	.098***
Bridging								.160***	.170***	.163***
News									.095***	.095***
TV enter- tainment										.228***

Sample size varies between 1,295 and 1,736, due to missing values.
n.s. not significant; * $p < .05$; ** $p < .01$; *** $p < .001$; SNS social network sites

content. The latter result is, again, hardly surprising, as online content items were partly chosen based on a website that determines popularity of online content via the attention it received on social network sites. What is less straightforward, however, is the higher level of awareness for TV entertainment and the lower level for news awareness along frequent use of social network sites. References (links, comments, etc.) to both types of content can be distributed via these platforms, but use of the latter shows different patterns of relationships with the two types of content. RQ2 can thus not be unequivocally answered.

Given the apparent relationships between awareness of media content, media use, and integrative status, RQ3 and 4 are answered using multivariate regression analysis to account for these multiple correlations. Table 4 presents the standardized OLS regression coefficients for awareness of the three types of content.

The overall patterns for relationships between media use and content awareness remain mostly stable after controlling for integrative status, demographics, and interest in current events, yet the size of the coefficients is about halved when compared with the bivariate correlations from Table 3. The relationships between newspaper use and news awareness, TV use and recognition of TV programs, as well as use of social network sites and awareness of online content remain the strongest associations between media use and awareness of the respective type of content. The negative relationships between watching television or listening to the radio and recognizing online content items from Table 3 also persist in spite of the control variables.

Different types of media content are thus recognized in unique ways (RQ3). In addition to the different levels of awareness among respondents in general (see Table 2), relationships with media use and integrative status are different for each medium and type of content, especially when comparing online content with news and TV entertainment. Typical online content items (user-generated videos, funny websites, but also more serious content about an international trade agreement or activism against neo-Nazis) are not comparable to traditional media content in terms of the level of awareness they reach.

In addition to media use, the integrative status of media users is also related to their awareness of content (RQ4). A large network of looser connections (bridging) goes along with a higher awareness of all three types of content. Strong connections within a tighter-knit network of close relationships (bonding) are (positively) related with news awareness only. Given the findings on

Table 4: Regression analysis for content awareness (standardized coefficients)

IVs	DV: Content awareness		
	News	TV enter- tainment	Online content
<i>Media use</i>			
TV	.052*	.151***	-.056*
Radio	.079**	n.s.	-.058*
Newspaper	.129***	.099**	n.s.
Magazine	n.s.	.072*	.071*
Internet	.049*	n.s.	n.s.
SNS	n.s.	.104***	.223***
<i>Integrative status</i>			
Bonding	.064*	n.s.	n.s.
Bridging	.058*	.115***	.082**
<i>Control variables</i>			
Gender (F)	-.148***	n.s.	n.s.
Age	.198***	-.125***	-.203***
Education	.140***	n.s.	.066*
Income	.063*	n.s.	n.s.
Interest in current affairs	.229***	n.s.	.083**
R ²	.305***	.103***	.175***
n	1,194	1,212	1,212

n.s. = not significant; * $p < .05$; ** $p < .01$; *** $p < .001$

social capital and use of social network sites (Domahidi, 2016; Ellison et al., 2007; Valenzuela et al., 2009; Williams, 2006; Wilson et al., 2012), the relationships between integrative status and structure of contacts in social network sites are explored in greater detail.

For the subset of Facebook users (1,301 respondents, or 75% of the sample), regression analysis was repeated for awareness of the three types of media content, including the number of “friends” people have on Facebook and the perceived heterogeneity of this network of contacts as independent variables (Table 5). Results for media use and integrative status are overall similar to the general sample. With regard to the structure of their Facebook network, only the number of friends turns out to be related to content awareness, while self-reported heterogeneity of the people users interact with most is not. The number of recognized online content items is higher for users with a large network, but the number of news items retained is smaller. The number of entertaining TV programs they remembered seeing is not related with the structure of users’ Facebook networks. The way social network sites are used thus influences the relationships between use of these platforms and content awareness.

6.2.2 Summary and discussion

This first part of the analysis has explored the integrative potential of media mainly through the awareness of media content among users. Of the selected content items, news items reach the highest level of recognition by far. Top political news apparently help with bringing people together through a shared awareness of current issues in a society—much more so than popular television entertainment. Such programs attract large audiences at the same time, but in absolute terms, these audiences are likely smaller than the groups aware of political events.

From a normative point of view, news items are important for social integration because societies need a public sphere in which to discuss important issues and come to political decisions that can be accepted as legitimate by the people. Bringing issues to public attention is an important prerequisite for this democratic function. But through this process, agenda setting effects take place, which, beyond the more normative or abstracts ideals of a shared public sphere, provide people with a canvas of topics that large parts of the population are aware of. Even if they do not actively participate in a specific debate or may actually know very little about a given issue, they are still at the margin of the arena that forms around a topic.

Table 5: Regression analysis for content awareness among Facebook users
(standardized coefficients)

IVs	DV: Content awareness		
	News	TV enter- tainment	Online content
<i>Media use</i>			
TV	n.s.	.144***	-.091**
Radio	.075*	n.s.	-.070*
Newspaper	.142***	.136**	n.s.
Magazine	n.s.	n.s.	.090*
Internet	.076*	n.s.	n.s.
SNS	-.076*	.073*	.128***
<i>Structure of network on Facebook</i>			
Number of “friends”	-.094**	n.s.	.110**
Heterogeneity of network	n.s.	n.s.	n.s.
<i>Integrative status</i>			
Bonding	.071*	n.s.	n.s.
Bridging	.071*	.132**	n.s.
<i>Control variables</i>			
Gender (F)	-.150***	n.s.	n.s.
Age	.150***	-.116**	-.172***
Education	.130***	n.s.	.069*
Income	.076*	n.s.	n.s.
Interest in current affairs	.209***	n.s.	.102**
R ²	.300***	.096***	.148***
n	838	852	852

n.s. = not significant; * $p < .05$; ** $p < .01$; *** $p < .001$

Compared with news or TV entertainment, online content reaches low levels of awareness. The viral video documenting the sexist remarks a woman hears while walking the streets of New York City was remembered by one in four respondents. After that, the other selected content items reached markedly lower levels of awareness. This may be an effect of the long tail of similarly irritating, amusing, or otherwise appealing online content. There are so many that only a few of them reach a wider awareness. Interesting in this regard are YouTube videos that were not included in the charts of 10000 Flies, but appeared in the video site's own top 10. These videos reach a comparatively high level of visibility on YouTube, but this leads to a level of awareness where only one in twenty or even fewer people remembered at least one of the selected videos. Online content thus seems to serve more niche functions. Apart from the viral video, which also received attention on online news sites and in blogs, other online content is possibly spread within smaller networks of people who share an interest or a sense of humor. Or success on social media platforms like Facebook, Twitter, and YouTube alone is not enough to reach wide-spread content awareness. Media with a wide audience and/or a more condensed overview of what is of relevance (in a broad sense) could be necessary as multipliers for online content to achieve a wide spread. This function could be served by online media, but also traditional outlets like television programs or newspapers. Otherwise, simply receiving many "likes" on Facebook or "retweets" on Twitter (as assessed by 10000 Flies) does not automatically go along with general awareness of an online content item.

Of course, the content used in the questionnaire represents a unique selection, and the chosen news stories, TV programs, and online content items are not equivalent. But the point of this investigation was to explore to what degree typical content from the news, mainstream television programs, and the online realm differs. The three types of content appear to reach different audiences, both in terms of size and in terms of what media these audiences tend to use. Frequently reading newspapers and watching television increase the number of recognized news items and TV programs. Radio use was likewise positively related to news awareness, albeit only slightly. Reading printed magazines also showed weaker relationships to content awareness, but for both radio and magazines, it may be advisable to look into use of different *types* of offerings in the future (e.g., use of talk radio or news magazines with regard to news awareness). The same appears to apply to the Internet, which, as outlined in section 3.3, differs from traditional

mass media in terms of usage. As a result, online use in general was hardly related to content awareness at all, yet different types of online offerings should likely be analyzed in more detail.

In the present study, this was done for social network sites, whose use was indeed associated with content awareness. Frequently using such sites goes along with a higher awareness of online content, but not necessarily of news, which is in line with findings about Facebook use not increasing knowledge about current events (Wells & Thorson, 2017). Having a large network on Facebook was related to recognizing more online content, but fewer news items. It could be that platforms like Facebook create openness for some types of content (like funny videos or entertaining posts from websites), but not for others. For political content, Bakshy et al. (2015) showed that Facebook users click on more items that match their opinions, even if more challenging content is present in their feed of updates as well. This could mean that users expect different things from different media, with, e.g., newspaper readers seeking a broad overview of what is going on, while logging into Facebook is more related to an interest in like-minded or also light-hearted content (different functions of social network sites and other online platforms will be explored in section 6.3).

Yet even seemingly superfluous videos, pictures, or texts spread via social network sites still contain metamessages that can have integrative potential. Make-up or fashion tutorials on YouTube, for instance, can transport norms and ideals about beauty, gender, or appropriate social behavior (Bock & Mahrt, 2017; Mahrt, 2017b). These need not conform to mainstream ideas, but even in opposing the status quo, there is still engagement with it. The viral videos showing a woman walking the streets of New York City and activism against neo-Nazis in a small German town overtly address the issues of sexism and fascism, respectively. The clips make clear that such behavior is not accepted by large groups of people, and they thus contribute to metamessages about the value of equality. Given the variety of content included in the present analyses, however, no conclusions about awareness of or agreement with specific metamessages can be drawn here.

The inclusion of variables for integrative status has produced interesting results in the analysis of content awareness. Indicators for bonding and bridging social capital of course cover only parts of an individual's integrative status. Yet his or her position in a network of close and loose ties is related to media use as well as content awareness. As expected in section 2.4, media use is positively related to

a person's integrative status, especially for bridging social capital. This replicates findings from research on cohesion in local communities, using other measures for integration (e.g., Mahrt, 2008; McLeod et al., 1996), yet the causal relationships still remain unclear (Hoffman & Eveland, 2010; Westerik, 2001). Likewise, the rather low level of association between awareness of content and bridging or bonding social capital shows that knowing about, for instance, current issues is not necessarily an indicator of a high level of social integration. Awareness of media content should thus not be used as a direct indicator or proxy for a person's *integrative status*. In the current study, social integration, as a person's integration into personal networks, was instead conceptualized as an individual characteristic that is probably relatively stable over time, while awareness of current media content is likely much more volatile. The integrative status of a person could thus be one of the *antecedents* of content awareness, which is likely also influenced by media use, among others. Without longitudinal data, however, these assumptions cannot be tested here.

Content awareness itself is, in the meantime, considered as an indicator for the *integrative potential* of media. In this regard, the effect of the use of social network sites could be double: In addition to spreading content in the platform itself, the use of social network sites can increase bridging capital in particular (Ellison et al., 2007). And both the use of social network sites and bridging social capital are related to a higher awareness of media content, even if not for all types of content. Possible mutually reinforcing effects between both factors should be studied in the future.

In addition to the cross-sectional nature of the survey, some limitations of the presented analyses have to be addressed. As stated above, the selection of media content items is certainly not representative. For television, but especially for online content, many more items could have been chosen, which would possibly have led to very different levels of awareness among respondents. Hopefully, future studies will show to what degree the results of this study can be replicated with different media or in different national contexts and how they compare to alternative measures such as knowledge about media topics, for instance news, or conversations about media.

With regard to media use and integrative status, the study has relied on self-reported measures. The measures for media use are also relatively coarse-grained, even if social network sites have been examined in more detail. Williams's (2006)

scales for social capital have produced high reliability, but also many missing values, which limits the scope of the presented multivariate analyses. Analyses including variables for integrative status should thus not be seen as representative for the German population.

Future studies into awareness of online content should also try to include younger users. Only adults aged 18 or over have been surveyed here. The low levels of awareness for frequently watched YouTube videos could be due to the fact that the popularity of this type of content (and the vloggers, or video bloggers, who produce them) stems from a younger audience not covered by the survey (Bock & Mahrt, 2017).

In spite of these limitations, the presented analyses contribute to the field of integrative functions of the media. Using awareness of media content as an indicator, they compare the integrative potential of different kinds of media and their typical types of content. The widespread recognition of news in particular does not indicate the existence of echo chambers or filter bubbles within the German population. Yet a media repertoire that heavily relies on social network sites could lead to a more entertainment-oriented awareness of current topics, at the expense of knowledge about news—although this type of platform can be used for both entertainment and information. Especially heavy users with a small network of contacts on a given platform could receive a more uniform set of messages on the platform, less in line with topics and metamessages shared across the general population. Given that the use of social network sites does not, however, appear to replace traditional mass media (see Table 3) it seems that different media fulfill unique functions and complement each other. This may be true for both the typical content each medium distributes and usual styles of using it. The second part of the survey analysis covers how people use online platforms in greater detail to shed light on these open questions.

6.3 Online repertoires and types of users

As explained in sections 3.4 and 6.2.2, media users combine a range of different media in their everyday lives. These repertoires cover a variety of media types, both traditional and online (Hasebrink & Domeyer, 2012; Hasebrink & Popp, 2006;

Reagan, 1996; Taneja, Webster, Malthouse, & Ksiazek, 2012). Some studies show how a medium like television can be included in individual repertoires for different purposes, such as entertainment or information about current events (S. J. Kim, 2016). The latter category has been a focus of research into media repertoires, which in recent years tends to include comparisons between traditional media and online sources for news and information on current events (Hasebrink & Schmidt, 2013; Hölig & Hasebrink, 2014; Mende, Oehmichen, & Schröter, 2012). Given the diversity of available media and potential purposes of media use, studies usually focus on broad categories of media types (e.g., television versus radio) or offerings within one medium, such as channel repertoires in television (Webster, 2005; Yuan & Webster, 2006). When the use of different media is considered, scholars often analyze just one genre of content, usually information. With regard to the Internet, studies have shown the variety of purposes that it can serve, both for receiving information and communicating with other people (Taneja et al., 2012), but also when considering the diversity of online sources people use for a single purpose, such as information about current events (Hasebrink & Schmidt, 2013).

The diversity of online offerings and styles of use is an important basis for fears about niches forming online, for instance in echo chambers (Sunstein, 2007) or filter bubbles (Pariser, 2011), as discussed in Chapter 3. Yet it could also be that certain styles of online use lead to larger awareness of media content (see section 5.1), so that the integrative potential of the Internet could be more fully realized among respective user groups. As shown in the previous section, frequent use of social network sites and a large number of contacts within a platform like Facebook, for instance, increase the amount of online content users recognized. Yet this still leaves room for different levels of knowledge and opinions on the respective content.

In light of the variety of online use and its potential consequences for integrative media effects and thus the integrative potential of the Internet, the current survey contains questions about the use of different types of online platforms. Two major functions of media use are covered: information and entertainment. If the Internet leads to fragmentation into niches and a loss of social integration, this should become visible in diverse online repertoires, for instance for these two functions. And with different repertoires, users would inevitably also receive different content items and socially benefit less from a shared canvas of current news or entertaining items. In light of the amount of content available

online and the diversity in online information repertoires (Hasebrink & Schmidt, 2013; Taneja et al., 2012), it seems likely that online use varies quite a lot, but it is unclear how different repertoires are related, for instance, to awareness of media content.

Given the results from section 6.2, online offerings have clearly not replaced traditional media, at least not when all users are taken into consideration, as there is a range of positive correlations between online use and use of traditional media (Table 3). But the analysis then proceeded to investigate Facebook users in more detail, which indicated that the platform could be connected to information and entertainment functions in different ways (Table 5). Although technically any type of content can be shared via a social network site, the platform could, in practice, be better at spreading light-hearted entertaining content than news, for example, which resulted in the reported differences with regard to content awareness. Similar studies could be conducted for many other platforms that also allow users to fulfill a range of functions. Instead of following this exemplary approach, the following analysis tries to strike a balance between covering individual online brands (which would quickly have to be limited in number) and the more general perspective of summarily comparing “the Internet” with other types of media typical of repertoire research. The current chapter looks at online repertoires only and investigates how Internet users combine different *types* of platforms (but not single brands). This should uncover, if present, subgroups of users with typical online repertoires, who use online sources for very different reasons. Such behavior may also explain why using the Internet in general was not a good predictor of content awareness (see section 6.2.1). Lastly, this approach should allow for a better grasp of the integrative potential of the Internet—which may unfold differently for different types of online users.

RQ5: Which types of users for online information about current events and online entertainment can be distinguished via online repertoires?

RQ6: What are the relationships between online repertoires for information about current events and entertainment with content awareness?

Given the long-standing and still apparent differences in online use by age, gender, education, and income (Frees & Koch, 2015), it can be expected that

younger groups place a higher importance on online sources. But online use for informational (Schmitt, 2014) and audiovisual purposes (Feierabend, Plankenhorn, & Rathgeb, 2014; Koch & Liebholz, 2014) varies a lot among adolescents and young adults. Even among the younger generations, some users rely heavily on online sources, while others avoid certain content, for instance information on current events.

RQ7: What are the demographic differences between types of users of online information about current events and online entertainment?

Lastly, users can be oriented to different degrees toward entertainment and/or information, and they can be more or less heavy users of the Internet. The Internet can serve as an all-round platform for both entertainment and information. But users could also rely on it for only select purposes, with a narrower online repertoire.

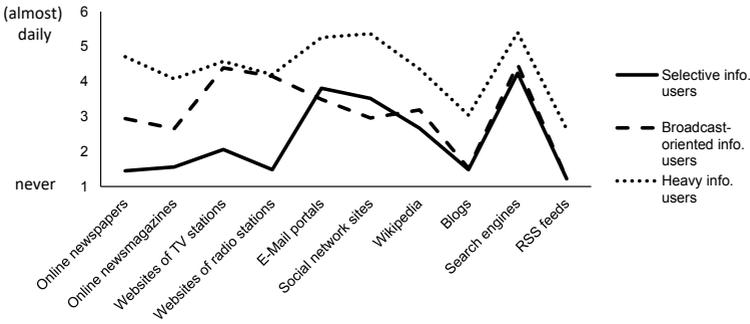
RQ8: How do online repertoires for information about current events and entertainment overlap?

Cluster analysis, based on Ward's method with the squared Euclidean distance as a measure of similarity, is used to explore online information and entertainment repertoires. The classification is based on the frequency of using ten online sources for information about news and current events and five online sources for entertainment or to pass the time (see section 6.1 for the concrete items).

6.3.1 Results

The cluster analysis for users of online sources for *information on news and current events* is based on 1,387 respondents who indicated frequencies of use for all ten online sources. Inspection of the elbow diagram and group comparisons suggest a three-cluster solution with an evenly split sample (RQ5). Figure 1 gives means for the ten variables used for grouping the cases. It shows clear differences between the three clusters: The first cluster has the lowest affinity for online information and is thus named *selective information users* (34%). They rely on e-mail

Figure 1: Frequency of using online sources for information on news and current events by type of information use

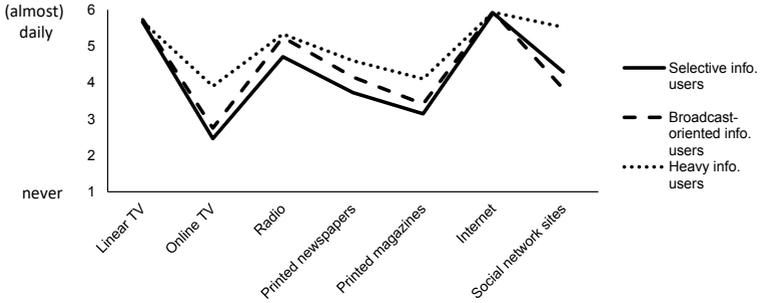


portals, social network sites, and search engines for information on news and current events, but tend to avoid the other sources. These three types of platforms are also frequently used by the second group, who additionally combine this use with rather frequent visits to websites of television and radio stations. This group is thus called *broadcast-oriented information users* (33%). The third and last group use all ten sources more frequently than the other two, making them *heavy information users* (32%). E-mail portals, social network sites, and search engines are used at least several times a week for information, but a range of other sources follows suit, especially websites of traditional mass media (newspapers, news magazines, TV, and radio stations). Only RSS feeds and blogs are rarely used, even by the *heavy information users*.

The three groups all use the Internet daily or almost daily; even the *selective information users* thus have the possibility to access online information on an everyday basis. In fact, the general media use of the three types of online information users differs only slightly, with the *heavy information users* watching more online television, accessing social network sites more frequently, and reading printed magazines a little more often (Figure 2).

Differences in how many media content items the three groups remember (Figure 3) can thus not be explained by how often certain types of media are accessed, but by what these are used for (RQ6). Differences in online use for information, at least, are clearly reflected in what media content people are aware of. The

Figure 2: Frequency of using media by type of information use



differences across all three types of content between *selective information users* and *heavy information users* are significant at (at least) the .05 level in two-sided t-tests. *Selective information users* and *broadcast-oriented information users* significantly differ with regard to awareness of news and television entertainment, while *broadcast-oriented information users* remember significantly less television entertainment and online content than *heavy information users*.

The three groups not only differ with regard to their media use and awareness of media content (RQ7; Table 6). The *heavy information users* are younger and have a higher level of formal education as well as income than the two other groups. They

Figure 3: Number of media content items remembered by type of information use

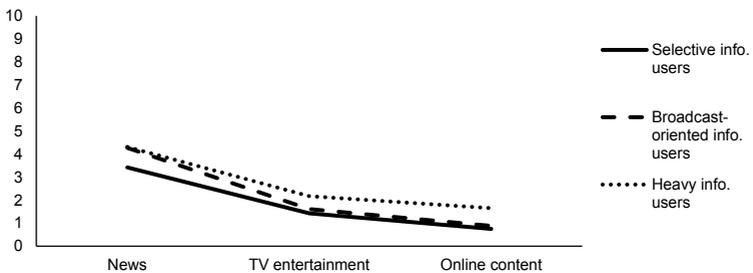


Table 6: Characteristics of types of information users

	Selective info. users	Broadcast- oriented info. users	Heavy info. users	All users in the sample
<i>Age (%)</i>				
18–29	18*	15	26	19
30–39	18*	16	18	17
40–49	26*	25	22	24
50–59	21*	23	20	22
60–69	18*	21	14	18
<i>Gender (%)</i>				
Female	54	50	49	51
Male	46	50	51	49
<i>Education** (%)</i>				
Primary school or less	41*	39*	20	34
Some secondary school	35*	29*	35	33
Completed se- condary school	23*	33*	45	33
<i>Household income (%)</i>				
Up to €17,999	24	19	19	21*
€18,000–29,999	32	32	29	31*
€30,000–47,999	32	32	35	33*
€48,000 or more	12	17	17	14*
n	473	464	450	1,739

Note: Due to missing values, not all cases were included in the cluster analysis.

* Rounding error.

** The three levels of education correspond to the German degrees “Volks-/Hauptschulabschluss,” “Realschulabschluss/Mittlere Reife,” and “(Fach-)Abitur,” respectively.

also have the highest interest in current events. The *broadcast-oriented information users* are the oldest group, while the *selective information users* have the lowest income, lowest formal education, and lowest interest in current events. The latter group also contains a higher proportion of women (54%) than the other two groups, which are about evenly split between male and female respondents.

For *online use for entertainment* purposes, a different picture emerges than for online information. Although fewer items were used, the cluster analysis of 1,654 respondents presents a solution of four rather distinct types of online entertainment users (RQ5; Figure 4). The largest group consists of *light entertainment users* (33%), who (on average) use all of the suggested platforms fewer than two or three times a month. They are most open toward watching online videos, but only rarely engage in this activity. They share this comparatively low affinity for online entertainment with the *SNS entertainment users* (25%), who hardly use any online sources for entertainment, except social network sites (SNS), which they access at least several times a week for entertainment. Online videos are much more often used by the *video entertainment users* (16%), who frequently use websites of TV stations (including video archives), online video platforms, and also social network sites for entertainment purposes.

Lastly, as for online information, a group of *heavy entertainment users* (26%) emerges. These respondents use all suggested types of online entertainment at least once a week, with an almost daily use of social network sites.

Figure 4: Frequency of using online sources for entertainment by type of entertainment use

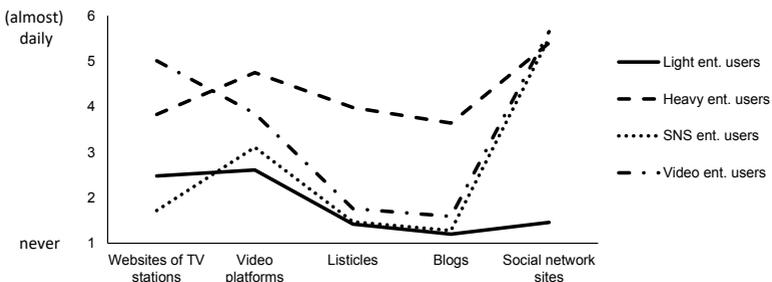
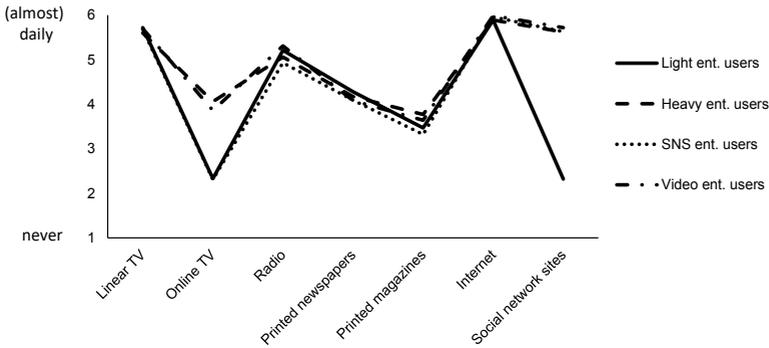


Figure 5: Frequency of using media by type of entertainment use

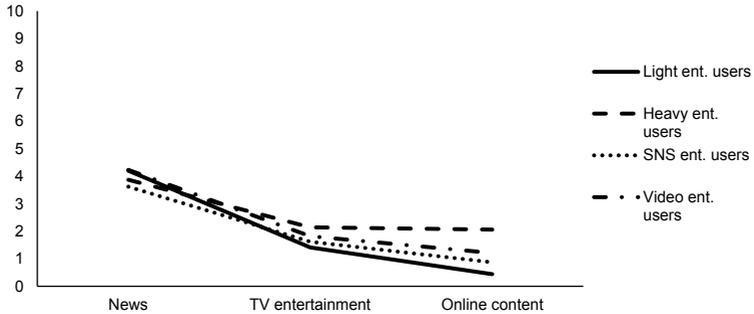


Use of other media does not differ across types of online entertainment users as much as it did for information users (Figure 5). The higher frequency of watching television online among *heavy entertainment users* and *video entertainment users* appears self-evident and validates the measurement of variables, given the construction of clusters. Likewise, *light entertainment users* are already distinguished by their markedly low usage of social network sites, which all of the other three groups use almost daily. Use of linear television, radio, print media, and the Internet in general does not differ across types of online entertainment users.

Yet how media are used (both online and offline) by each type appears to be reflected in what media content users are aware of (RQ6; Figure 6). News awareness does not significantly differ between *light entertainment users* and *video entertainment users* on the one hand and *heavy entertainment users* and *SNS entertainment users* on the other. All other pairwise differences between groups with regard to content awareness are significant (at least at the .05 level in two-sided t-tests). The *heavy entertainment users* state they remember the highest number of online content items, while the *light entertainment users* retained the lowest number. Similar results can be observed for awareness of current television entertainment.

As with types of information users, the group most oriented toward online sources for entertainment, the *heavy entertainment users*, are the youngest, with the highest level of formal education and highest average income (RQ7; Table 7). With

Figure 6: Number of media content items remembered by type of entertainment use



52 percent males, they have the highest proportion of men. In contrast, the *video entertainment users*, while also being rather young with a relatively high level of education, have a below-average income and are composed of more women than men (55% females). The *SNS entertainment users* are close to the average in terms of age and income; 53 percent of this group are women with the level of formal education being slightly below average. Lastly, the group with the lowest affinity for online entertainment, the *light entertainment users*, differ from the average mainly with regard to their higher age and slightly lower level of education.

Use of social network sites was included in both cluster analyses and has proven, especially for online entertainment, to help separate groups of users with different online repertoires. The survey asked for the use of social network sites for information and entertainment purposes separately, but the answers for both items are highly correlated (Pearson's $r = .823$; $p < .001$). This type of platform thus appears to fulfill both functions simultaneously, which could be due to the fact that users cannot know what information- or entertainment-laden posts by others they will see when logging onto a site. But especially for entertainment, these platforms are a staple in the online repertoires of two thirds of all users.

RQ8 focuses on how both typologies of online users relate to one another—beyond the commonalities in the use of social network sites. As Table 8 shows, different combinations of online use are very unevenly distributed. About half of the

Table 7: Characteristics of types of entertainment users

	Light ent. users	Heavy ent. users	SNS ent. users	Video ent. users	All users in the sample
<i>Age (%)</i>					
18–29	8	37	15*	22*	19
30–39	11	18	21*	20*	17
40–49	28	20	24*	22*	24
50–59	27	16	21*	22*	22
60–69	26	9	18*	15*	18
<i>Gender (%)</i>					
Female	49	49*	53	55	51
Male	51	52*	47	45	49
<i>Education** (%)</i>					
Primary school or less	39	23	40	30*	34
Some secondary school	31	34	34	36*	33
Completed se- condary school	30	43	26	35*	33
<i>Household income (%)</i>					
Up to €17,999	20*	22*	21*	25	21*
€18,000–29,999	34*	29*	30*	30	31*
€30,000–47,999	31*	34*	36*	31	33*
€48,000 or more	16*	16*	12*	14	14*
n	551	423	415	265	1,739

Note: Due to missing values, not all cases were included in the cluster analysis.

* Rounding error.

** The three levels of education correspond to the German degrees “Volks-/Hauptschulabschluss,” “Realschulabschluss/Mittlere Reife,” and “(Fach-)Abitur,” respectively.

more Internet-oriented types of information users each fall into one respective category in terms of online entertainment use.

Unsurprisingly, the *heavy information users* are also most often *heavy entertainment users* (51% in column percentages; not shown in the table), while only very few are found among the *light entertainment users* (6%). But among the latter group, 52 percent of *broadcast-oriented information users* can be found—and 41 percent of the *selective information users*. Of the latter, another 35 percent are *SNS entertainment users*, who mainly use social network sites, but rarely any other sources for online entertainment. The other way around, the four types of online entertainment users also show different preferences for online information use. *Light entertainment users* are most prone to online information use as *broadcast-oriented information users* (52% in row percentages; not shown in Table 8), while 63 percent of *heavy entertainment users* are also *heavy information users*. Among *SNS entertainment users*, being a *selective information user* is most common (48%). Lastly, the *video entertainment users* are spread more widely across types of information use, with 44 percent being *heavy information users*. Different combinations of repertoires for online information and online entertainment are thus apparent, again highlighting the multiplex character of “the Internet” in everyday media practices.

Table 8: Overlap between type of online information and online entertainment use (cell percentages)

Types of online entertainment use	Types of online information use			Total
	Selective info. users	Broadcast-oriented info. users	Heavy info. users	
Light ent. users	14	17	2	33
Heavy ent. users	5	4	16	26*
SNS ent. users	12	6	7	25
Video ent. users	3	6	7	16
Total	34	34*	32	100

n = 1,342

* Rounding error.

6.3.2 Summary and discussion

Based on the list of popular online platforms used in the current survey, different repertoires emerge that have been described above via types of users. The cluster analyses reveal that relying heavily on online platforms for one purpose does not necessarily entail heavy online use for other purposes. This could leave plenty of room for online niches to form (see section 3.5). Frequently using a wide variety of online sources for information *and* entertainment is a common combination, as well as refraining from online platforms for both purposes. But looking up information especially on websites of television and radio stations (*broadcast-oriented information users*) while hardly using online platforms for entertainment (*light entertainment users*) is about as common as well. In fourth place is the combination of selective online use for information and using mainly social network sites for entertainment, but not other platforms.

“The Internet” thus appears to be used for different functions, with wider or narrower repertoires of online platforms. It comes as no surprise that the types of users described in the previous section also show different levels of awareness of media content. That *heavy information users* remember the highest number of news and *heavy entertainment users* (i.e., users of a wide range of online platforms for entertainment purposes) recognize more popular online content items than the respective other groups is to be expected and underlines the validity of the presented analyses. But these two groups also report higher awareness of the respective other types of content. Being online a lot and accessing many different online platforms, for information or for entertainment, thus appears to go along with having a wider horizon rather than isolating such users in a niche, filter bubble, or echo chamber. Of course, the respective user groups also report frequent use of traditional mass media, but with regard to these two user types, the fears about online fragmentation summarized in Chapter 3 seem to be strangely overdrawn.

While other groups of users learn less about media content, this can hardly be blamed on the Internet as many of them do not use it for information or entertainment much. Whatever its content, the Internet can scarcely realize any integrative potential within these groups. However, they still, on average, are online almost daily, but this does not seem to bridge the gap to the groups most aware of current media topics. This could be partly due to a lack of interest in, for instance,

current events or audiovisual entertainment. On the other hand, less frequent use of other media, in particular newspapers, could also contribute to explaining such a lower awareness of news. But in summary, using the Internet daily does not per se help to bring together those interested in what goes on in the world and on media and those less interested, and using the Internet, for whatever purposes, does not appear to lead to markedly different levels of content awareness, at least not for news or television programs.

Yet compared to these traditional types of media content, awareness of popular online content appears to work differently: There are clear differences across the four types of online entertainment users with regard to the number of online items they remembered. Many of these were of an entertaining rather than informational nature (see Table 1), so this finding again supports the categorization of entertainment users via the cluster analysis. But it appears that even highly spreadable and comparatively successful online content does not hold the same integrative potential as traditional media content. Such online items appear to gain publicity mainly among users who heavily rely on online sources for entertainment purposes. This could be considered a niche that is part of some people's media repertoire, but not others. In this perspective, the low level of awareness for these types of content (see also section 6.2.1) is likely due to the specific behavior of users. If you regularly frequent a variety of content-heavy online platforms you are more likely to come into contact with and subsequently recognize current online trends.

But the lower awareness of online content could also have to do with the nature of the content items themselves. Much of the online content chosen for the survey has a humorous appeal. Yet what one finds amusing may be very different depending on personal taste. Not all funny videos or satirical websites may thus be enjoyed by all users. Some may even think that online humor in general does not appeal to them (and it bears repeating that it remains unknown what people who recognized current media content knew, thought, or felt about it). Still other content may be too specific in terms of subject matter or genre to generate a general interest. The three videos from the YouTube top 10, for instance, were among the most popular items on the platform at the time. But commentary on select news by a somewhat uncouth young adult, a video in which a young woman styles her boyfriend, as well as a recording of someone playing a video game may simply not have the potential to interest many people. This raises the question of whether, in spite of its relative success, such online content could really contribute to

social integration, again keeping in mind that reactions to the same content may differ in spite of shared content awareness. It is also possible that the three videos or the other seven online content items were just too random and therefore unknown. While the findings on awareness for this content are in line with results from the pretest, future studies should further explore awareness for popular online content. For successful YouTube videos, the discussion will be continued in greater detail in Chapter 8.

Of course, repertoires can be expected to evolve with changes in the available media. When platforms alter their content or functionalities, this could affect how users access and interact with the sites. The survey has only covered a selection of the possible, albeit popular (see section 6.1), sources for information and entertainment purposes. A different questionnaire could lead to different results, in particular when including newer trends in online content and online use that have been neglected here. Initiatives such as Facebook’s “Instant Articles,”⁹ which integrates editorial content into the social network site in its entirety, without linking to a medium’s own website, or Twitter “Moments,”¹⁰ summaries in tweet form of current events, could have an impact on media repertoires, as people may start using the respective platforms in different ways or for different purposes. If these innovations are deemed useful or award users with informational gratifications, news sites could, for instance, become less attractive for heavy users of the respective social network site.

The increasingly frequent use of smartphones and apps (Koch & Frees, 2015; Müller, 2013; van Eimeren, 2013) is also likely to impact how people combine media, in the double sense of technical devices and content-driven services, in their everyday media practices. Google’s “AMP Project”¹¹ is another example of a technical innovation that could change repertoires in the near future. It allows publishers to present editorial content in a “leaner” HTML version, optimized for mobile devices. With more people using smartphones or tablets and more attractive content for these technologies, repertoires could shift—at least for some user groups. Maybe next to the clearly online-oriented user types, groups of mainly mobile users might emerge in a future study. The typology presented

9 <https://instantarticles.fb.com/>

10 <https://twitter.com/TwitterMoments>

in this chapter should thus be seen as a snapshot, surveying online users in late 2014 about a selection of then popular types of online sources for information and entertainment.

Online use clearly is diverse and notoriously hard to measure appropriately in a survey. While the results presented above appear to be meaningful and valid, they still only roughly capture online information and entertainment repertoires. An alternative approach would be to look at usage directly, via log files or similar data, to study repertoires in a more realistic way (S. J. Kim, 2016; Thorson & Wells, 2016; Webster & Ksiazek, 2012). This would also add to the question of fragmentation versus overlap in everyday online repertoires, and thus the integrative potential of the Internet. The following section proposes such an approach to assess to what degree repertoires *within* online platforms differ.

11 “Accelerated Mobile Pages Project;” <https://www.ampproject.org/>

7 Analysis of clickstream data: Online use within platforms

Depending on the perspective, fragmentation of online use may look very different—and it therefore is challenging to determine the integrative potential of the Internet. As discussed in sections 3.2 and 3.3, a large variety of content is available online, which typically leads to long-tail distributions with regard to popularity: A few content items are heavily accessed, but the vast majority of offerings is only used by comparatively few people. A few offerings may reach large audiences and thus unfold integrative potential, but most will not, and it remains unclear under which conditions which patterns develop (see section 5.1). From a platform-oriented perspective, this leaves considerable room for fragmentation of the online audience whose members may enjoy being better able to select content according to their interests, tastes, and opinions than in other media. However, people still combine different media outlets and types of content in their daily repertoires (Hasebrink & Domeyer, 2012). And as Webster and Ksiazek (2012) have shown, there is a considerable overlap between the audiences of popular online outlets and television stations (see also sections 3.4 and 4.3). But does their resulting conclusion that there is a “massively overlapping culture” online hold for all levels of online use?

7.1 Massively overlapping culture online?

Webster and Ksiazek’s (2012) conclusion about overlap as the dominant pattern of contemporary media audiences is derived from an analysis of the use of 98 television channels and 138 websites. Use of these outlets is measured via people meters and tracking of website access in over 1,000 households, representative of the US population. Websites that were used by less than three percent of the panel were excluded from the analysis. For the remaining 236 media outlets, combinations of usage in everyday repertoires can be considered as very real-

istically captured, at least for the television sets and primary computer of the households (other devices are not included). The scholars use a network-based approach to calculate the overlap of audiences above chance between all pairs of media outlets (a broader discussion of this approach is provided by Ksiazek, 2011). Almost all audiences of single media outlets overlap with those of virtually all other outlets in the sample. Even users of niche outlets, for example special-interest entertainment websites, also use more mainstream websites or TV channels, fitting the idea of a “massively overlapping culture” (Webster & Ksiazek, 2012, p. 51), instead of the disconnected niches often associated with the long tail of online content.

While the argument and analysis presented by Webster and Ksiazek is intriguing and innovative, they do not discuss the different types of media outlets in their sample in greater detail. They consider all broadcast and cable television channels, and the only criterion for excluding websites is a reach deemed too small (see p. 48). A list of all outlets is unfortunately not included, but the figures in the results section of their article provide some indication of the variety of websites studied. The sample encompasses websites of traditional media companies, like ESPN Online or NYTimes.com, but also Yahoo! and Facebook. The former type may present the same or similar content as their original offline counterpart, and there is a certain likelihood that two users of these websites will come across the same content on a given day. This is, however, quite different for Yahoo!, let alone Facebook. Yahoo! provides news and entertaining content, hosts a webmail service, a search engine, user-generated content via Flickr, and many more services and types of content. Knowing that somebody used Yahoo! thus allows for a less accurate prediction of what they would have encountered in terms of content. For Facebook, this is even more pronounced, as every user sees a unique combination of content items, both interpersonal communication as well as editorial or user-generated content, from a variety of sources. There may be trending topics visible in a Facebook newsfeed as well, but most displayed messages depend on a user’s personal network of contacts and subscriptions on the social network site.

From an economic point of view, determining the overlap of audiences between these and other online platforms and TV channels may be informative about concentration and competition in the market. But fragmentation research is also concerned with the social outcomes of a more homogeneous or heterogeneous media

offering. Fears about “*gated communities, sphericules, silos, echo chambers, cyber-Balkans, red media–blue media, or filter bubbles*” (Webster, 2014, p. 19; original emphasis) follow from the *effect* fragmented media use has on users’ opinions, knowledge, or willingness to accept compromise. This is not only due to using different platforms, but to the *content* present on these platforms as well (see section 3.2).

In an online environment, the content received becomes an issue for two reasons: First, there is just more content than in any traditional media outlet. Even if over a 24-hour period, a range of different programs air on any given television channel, this variety is dwarfed by what is available via many websites, let alone search engines. Second, online content can be used very selectively, by searching for certain topics or clicking only on those items present on a homepage that one is really interested in (e.g., articles for a news site or videos on an online platform). For both reasons, the likelihood that two random users of Google saw the same things within the domain google.com is probably close to zero. The likelihood that two viewers of ABC or readers of the printed New York Times saw the same things is considerably larger. Considering the use of content *within* media outlets, especially online platforms, could thus be an important extension of Webster and Ksiazek’s (2012) approach to online fragmentation—and help determine the integrative potential of the Internet.

7.2 Use of content items in different media

How users choose items within a medium and which items are thus selected is studied in a variety of fields, using different methods (for an overview of online environments, see Schweiger, 2010). Eye tracking studies for print media, for instance, have long focused on identifying factors that might lure readers in or “trap” them, i.e., that make them read an article in a newspaper even if they were not originally interested in its subject. More recently, such approaches have been extended to online environments, often with a focus on how news organizations can optimize the design of printed and online news outlets (e.g., Bucher & Schumacher, 2006; Feuß, 2013; Holmqvist, Holsanova, Barthelson, & Lundqvist, 2003). The studies show that for both online and print versions, news readers divide their usage into scanning and reading articles. In both environments, most

people only read what they are interested in (only a few read more systematically), but design elements such as headings, illustrations, and the placement of articles within a page can steer attention. Online, people scan more selectively, but when they click on the link to an article they tend to pay more attention to it than print readers often do to selected articles (Feuß, 2013). For both online and print news, usage can thus be described as a mixture of accidental and intentional reading, and news organizations actively try to capture their audience's attention to get them to read more of their content. Unfortunately, the studies within this research paradigm often do not consider the topical content of the articles and may simply infer readers' interests from the movements of their eyes on the tested news outlet. Yet one could argue that this is a more valid measurement of content interest than via a survey, as studies have revealed large differences between self-reported interest in news categories and actual readership (Donsbach, 1991; Tewksbury, 2003). This often concerns over-reporting of interest in, for instance, politics, which is actually ignored in the paper, for instance. The opposite phenomenon has been of interest in another research area.

Drawing on democratic theory, scholars have investigated the potential of media to bring news to people who are not interested in current affairs or not motivated to actively seek out news media. This is called the "trap effect" of media (Marcinkowski, 2010; Schönbach & Lauf, 2002, 2004) and would lead to a higher integrative potential of such media as larger audiences are made aware of current issues. Schönbach and Lauf (2004) argue that traditional mass media such as newspapers and television are "display media, [which] typically offer a (sometimes wide) array of professionally pre-selected, pre-arranged, and contextualized information [and are] *supposed* to 'trap' their audience" (p. 179; original emphasis). Indeed, studies show that both television and newspapers can lead to incidental or unintended news use among people with a low interest in politics, for instance due to the scheduling of news before or after a television program that many viewers want to see (Marcinkowski, 2010; Prior, 2007; Schönbach & Lauf, 2004; Wonneberger, Schönbach, & van Meurs, 2011). But even a research medium such as the Internet can lead to similar effects (Mitchelstein & Boczkowski, 2010). Trilling and Schönbach (2015), for instance, show that also users with a low interest in politics access news sites and seem to have at least a basic motivation to be up-to-date about current events. However, it is unclear what content they actually perceive within these sites, as the study does not consider

usage behavior *within* online platforms, and this could vary greatly: Prior (2007) shows that political knowledge as a result of online use increases especially among those with a pronounced interest in politics, but not for those who lack interest. He concludes that a high-choice environment such as the Internet may not be particularly effective in trapping audiences who would rather avoid news and current affairs. This finding is supported by research on what articles users of news sites most often select. Soft news, such as sports coverage, are much more popular than hard news on national or international politics (Tewksbury, 2003). Recent analyses of most frequently read articles on different news sites show similar biases in favor of soft rather than hard topics (Bright, 2016; S. E. Jarvis & Stephens, 2015; Tenenboim & Cohen, 2015; Wendelin, Engelmann, & Neubarth, 2017), especially during routine times that lack extraordinary political events such as major elections (Boczkowski & Mitchelstein, 2012).

The effect of online environments on news selection has also been studied for social network sites where platforms display what people within a user's network of contacts have posted (see section 3.3). In particular, people tend to selectively click on content items that are in line with their own political attitudes (Bakshy et al., 2015; Flaxman et al., 2016). Other studies show that displaying social cues with posted news items can overrule such mechanisms of selectivity and make people read ideologically diverse content (Messing & Westwood, 2014). This supports earlier findings on selective exposure to (printed) newspaper articles where readers can be drawn to content that is dissonant to their own opinions via a respective layout, design, or wording of headings, for instance (Donsbach, 1991, 2009).

Beyond news, the use of segments within an outlet's content has been studied most extensively for television, using people meter data. Audience flow from one program to the next within the same channel has been of interest to television executives for a long time (e.g., Kuchenbuch & Auer, 2006; Webster, 2006). Channel and genre loyalty play a role in explaining viewing behavior (Jonathan Cohen, 2002), and scheduling of programs back to back also accounts for watching patterns (S. J. Kim & Viswanathan, 2015; Wonneberger et al., 2011). This highlights the dual nature of media selection: Media users are agents who may follow their own interests and needs in their selection of content items, yet they also depend on the structures of media offerings that allow them certain choices—but not others (Webster, 2011). This duality of agency and structure also affects selection of content within different types of online platforms.

A very popular type of platform for information purposes consists of search engines (Frees & Koch, 2015). How these are used is studied in different ways, among others through log file analysis. Both the features of the search engine and its list of results as well as user characteristics influence which search results are clicked on. The order of results and wording of headlines and teasers are important, but so are user involvement, Internet proficiency, age, and level of education when it comes to influencing selection (Stark, Magin, & Jürgens, 2014). Also, the aggregated usage behavior feeds back into the ranking of search results, so that the choices of other users have an indirect influence on individual selection.

Research on the selection of content in social media platforms, another popular type of online platform that also serves for accessing and sharing media content (Busemann, 2013), is mainly conducted in the field of computer science via large-scale data-driven studies. Their focus is often on patterns in the distribution of usage, which may include local origin, but not topical content of videos (Brodersen et al., 2012; Xiao, Su, Bi, Xue, & Kuzmanovic, 2012; Zhou, Khemmarat, & Gao, 2010). Due to the methods employed in these studies (e.g., scraping software, downloads of data via a platform's application programming interface [API], or log files), user behavior can usually not be analyzed on the level of the individual, and information on users relies on online profiles within a respective platform, which may be incomplete or inaccurate. However, some findings are informative about how content items are accessed on platforms such as YouTube, Twitter, and Flickr: Usage shows strong local foci, as specific content is often popular within a single country only (Brodersen et al., 2012), but homophilic trends are also apparent for (self-reported) gender and age of users (Xiao et al., 2012). As stated in section 3.3, YouTube users often access videos directly via their URL when videos are embedded in other sites or have been recommended via interpersonal online communication (Brodersen et al., 2012). But searching for videos via the platform's interface remains the most frequent way of accessing videos, and clicking on a recommended video next to the selected one is a close second (Zhou et al., 2010). The algorithms behind the selection and ranking of recommendations of videos that likely are of interest to the audience of one particular video can thus drive usage in a platform such as YouTube—but again, what the algorithms display in which order depends on aggregated user behavior. Compared to the huge variety of content available on YouTube (Cha et al., 2007), this means that users will be offered highly similar content, “more of the same,” instead of a taste

of very different videos that would also be available to them, of course (Pariser, 2011). The platform aims at entertaining its users by presenting them what fits their already recorded preferences instead of widening their horizons or offering them surprises (Davidson et al., 2010). Thus, the agency of users and structures of platforms depend on and perpetuate each other (an illustration of this principle for online news can be found in A. M. Lee, Lewis, & Powers, 2014).

The summary of different branches of research on online usage illustrates that, as with other media, selectivity does not stop at the platform level and is driven by a variety of factors. To what degree the usership of a platform is fragmented or overlaps, remains, however, an open question.

7.3 Research questions

To further explore the possible fragmentation of online users, the overlap of usage of *content within platforms* is studied for two exemplary platforms: YouTube and Spiegel Online. Both are popular in Germany, ranking at second and 17th place of the most frequently used sites, respectively.¹² While the two chosen sites have comment sections and other interactive features, they are both content-heavy, with YouTube providing a virtually endless number of videos and Spiegel Online covering a broad range of news categories, both hard and soft. YouTube is the most popular video site in Germany (Egger & van Eimeren, 2016; Goldmedia, n.d.; Kupferschmitt, 2015), with comedy, videos games, music, and beauty/fashion being the most heavily used genres (Goldmedia, n.d.; webvideo.com, 2013). In surveys on popular news sources, Spiegel Online ranks highly as well and is widely considered a good source for information on topics relevant for public opinion (Hasebrink & Schmidt, 2013). Within the long tail of website use in Germany, both sites belong to the “fat head” of highly popular content providers. Following Webster and Ksiazek’s (2012) research design, both sites as a whole would probably contribute substantially to overlap in the German online audience. Yet they both offer a large number of content items, newly created ones or older items accessible

12 According to <http://www.alexa.com/topsites/countries/DE> (11 April, 2017).

via the sites' archives and search functions. To what degree their audiences actually overlap is an open question to be answered in this chapter.

RQ9: To what degree do the audiences between and within YouTube and Spiegel Online overlap?

This will also contribute to the knowledge about the trap effect (Schönbach & Lauf, 2002, 2004) of news in online environments. Do users of a news site who read soft news or human-interest content also access hard political information within the platform?

RQ10: To what degree do audiences between soft and hard news overlap on Spiegel Online?

With regard to YouTube, the genres that have shown to be popular on the platform in Germany pertain more to entertainment than information. While entertainment preferences are diverse (Rentfrow, Goldberg, & Zilca, 2011), is there content on YouTube that can attract a large audience and lead to overlap?

RQ11: To what degree do audiences for entertaining content items overlap on YouTube?

Since the usage behavior within a platform cannot be captured realistically via a survey, clickstream data are used to assess the overlap between audiences for the two selected platforms. This design allows the collection of large amounts of real-life usage data and is less obtrusive than, for instance, an experimental setting or eye tracking technology. The downside of this approach is the limited information available about the users in data sets available to independent research. But at least for basic demographic information, characteristics of users for different types of content can be described, while interest in different topics and genres can be inferred from their usage of the two investigated platforms.

RQ12: What are the differences between users of different kinds of online content?

The analysis focuses on the question whether the two online platforms can unfold integrative potential through the creation of audience overlap. This may, however, depend on the selected time frame. As the survey presented in Chapter 6 has shown, the level of awareness for different topics can vary widely. Exceptional events of national importance can bring together large audiences and also dominate media agendas (E. Katz & Liebes, 2007). Studies about the 9/11 attacks in the US, for instance, have revealed how an extreme event can gain widespread awareness over a short period of time (Emmer, Kuhlmann, Vowe, & Wolling, 2001; Reuband, 2010; Rogers & Seidel, 2002). As stated in section 2.1.1, such media events also influence interpersonal conversations, and in fact the studies on the diffusion of news about 9/11 reveal that a considerable number of people first learned about the event through talking to others.

While the terror attack has advanced the understanding of social contact and news diffusion, luckily no such event occurred during the conception of the present study, and as they are unexpected, it would be impossible to plan a study on the fragmentation of audiences around a comparable event. What can be foreseen, however, are ceremonial media events like sports competitions, which also bring people together, but for much more enjoyable reasons. For Germany, the Olympic Games, but especially international soccer events are important in this regard. Matches of the men's national soccer team usually top the list of the most watched television programs of the respective years (e.g., Zubayr & Gerhard, 2015), and the 2014 World Cup even reached the largest television audience since the beginning of its recording in Germany in 1975, with many people watching matches with friends or in public places (Gerhard & Zubayr, 2014). While this record in ratings was unforeseeable, the dates for the tournament were not, and the latter afforded an opportunity to study audience overlap, even in a potentially highly fragmented online environment. June 2014 was therefore chosen for the analysis of online usage behavior, covering about the first half of the World Cup (which began on 12 June). On the other hand, no major political event took place during this month (the elections to the European Parliament were held on 22–25 May), and the summer holidays, which typically bring about a slow news season, were still a while away. So politically, the selected month can be considered typical, while the World Cup can be expected to lead to at least some overlap within the audience, which should be assessable via the chosen method.

7.4 Method

The analysis of audience overlap between and within YouTube and Spiegel Online in Germany is based on data from a clickstream panel that were acquired from the market-research firm Nielsen. The panel comprises 54,790 members and is representative of the German population. Internet use on all stationary computers and laptops is automatically tracked for all panel members in a household. All individuals within the household who accessed at least one of the sites once or more from such a device during the month of June 2014 are included in the analysis. This results in a sample of 8,575 users, of which 58 percent are female and whose average age is 38.3 years (descriptive statistics for the sample are provided in Table 9). Fifteen percent of the panel used YouTube and three percent used Spiegel Online in the month under study. While this way of selecting users does not guarantee representativeness of all the German users of YouTube and Spiegel Online, it provides real usage data for a reasonably large and diverse group of people, with the selected month as an example.

The original data set contains information on who accessed which URLs within the two platforms; each case thus represents one view of a video on YouTube or a page on Spiegel Online. In total, 433,235 views were recorded of 244,925 unique videos on YouTube, while Spiegel Online was accessed 46,159 times for 8,002 different articles.¹³ Background information on the YouTube videos was extracted automatically via the platform's API, using the scraping software Facepager (Keyling & Jünger, 2013). For Spiegel Online, the articles were manually coded by two coders for their main topic or event they referred to (the codebook is reproduced in Appendix B). To harmonize the analysis of clickstream data with data presented in Chapter 8, the coding took place in two stages. Final reliability was assessed via a recoding of 1,600 randomly selected Spiegel Online URLs two months after the initial analysis. Reliability was assessed using the SPSS macro provided by Hayes and Krippendorff (2007), with Krippendorff's $\alpha = .87$. All topics that were accessed by at least 44 Spiegel Online users (or 2.5%) are considered in the following. These top 11 topics account for 14 percent of the articles in the data

13 Slideshows of photos on a current or historical event originally had as many unique URLs as pictures on Spiegel Online. These were aggregated, so that each slideshow has one URL and represents one "article."

set. The remaining content items were aggregated by the section of the site under which they appeared (e.g., politics, economy, culture,...).

Table 9: Characteristics of the sample of online users

	Users of You- Tube only	Users of Spiegel Online only	Users of both sites	All users in the sample	All users in the panel
Age (mean)	37.6	45.3	39.6	38.3	n.a.
Gender (%)					
Female	43	45	38*	42	48
Male	57	55	63*	58	52
Education** (%)					
Primary school or less	23*	11*	13	21*	21
Some secondary school	41*	34*	36	40*	38
Completed se- condary school	37*	56*	51	40*	41
Household income (%)					
Up to €18,000	31*	17	28	30	18*
€18,001–27,000	22*	20	19	21	21*
€27,001–36,000	18*	17	17	17	19*
€36,001 or more	30*	46	36	32	43*
Children living in the household (%)	26	18	21	25	n.a.
n	6,796	428	1,351	8,575	54,790

n.a. not available

* Rounding error.

** The three levels of education correspond to the German degrees “Volks-/Hauptschulabschluss,” “Realschulabschluss/Mittlere Reife,” and “(Fach-)Abitur,” respectively.

For different steps of the analysis, the original data set was aggregated in different ways: Usership of videos and articles, respectively, was assessed as the number of unique users for each item (not via the number of views, as some people accessed the same video or article multiple times). For the analysis of patterns of usage, the data set was converted so that the 8,575 users became the cases and use of videos and articles was transformed into variables. For YouTube, use of videos was additionally aggregated to the level of channels within the platform. A YouTube channel generally presents videos of the same genre and often features the same protagonists as well, which still allows meaningful analyses of content received while reducing the number of cases considerably (the 244,925 videos hail from 109,093 channels). Again as with Spiegel Online, the following analysis considers all channels that reached at least 2.5 percent of the sample (i.e., they were accessed by 204 users or more).

Overlap between users of content items is considered not in absolute numbers, but via the phi coefficient, which denotes the association between two binary variables. Thus, the pairwise overlap above chance between using any two content items on YouTube or Spiegel Online can be determined. Phi can be interpreted in a similar way as Pearson's r , theoretically ranging from -1 to +1, with 0 denoting the absence of an association. Values of .30 or above can be considered as (at least) a medium level of association (Jacob Cohen, 1992). The statistical significance of phi values is assessed via the chi-squared statistic.

7.5 Results

The overlap of usage of the two platforms (RQ9) can first be determined for YouTube and Spiegel Online in general. Webster and Ksiazek (2012) compare the observed pairwise duplication of audiences between outlets with the expected duplication due to the reach of each of the two outlets in question. This method allows determining whether an overlap above chance exists or not. For the Nielsen panel, multiplying the reach of YouTube (15%) with that of Spiegel Online (3%) yields an expected overlap, or duplication, of .5 percent, while the actual overlap is two percent. Following Webster and Ksiazek's approach, a link is thus present, but no statement about the strength or statistical significance of the association can be made.

The phi coefficient also considers the overlap between two outlets (or single content items) relative to the marginal distributions, just as multiplying the overall reach of two platforms does. But in addition, the size of the phi coefficient denotes the strength of the association. For the two platforms studied here, 16 percent of the sample use at least one of the two platforms, with two percent of the entire panel using both (see Table 9). This corresponds to a phi coefficient of .31 ($p < .001$), a moderately strong, positive association. This means that people tend to use both platforms above the level of mere chance due to the marginal distributions. There is thus a substantial overlap, which could be compared with that of other platforms if a broader data set were available. This would be an alternative approach to platform-level analyses such as Webster and Ksiazek's (2012). Since only data on two websites are available for the current study, overlap for usage of content *within platforms* is instead studied, first for Spiegel Online, followed by YouTube.

7.5.1 *Overlap of usage on Spiegel Online*

The audiences for single topics (let alone individual articles) on Spiegel Online are rather small (Table 10). By a large margin, the soccer World Cup is the topic that attracts the biggest audience (30% of all users of Spiegel Online), while the homepage is the site most often accessed (19%). The second most frequently accessed topic (coverage following the election to the European Parliament; 4%) and article (a page for a live ticker of scores during World Cup matches; 5%) are viewed by considerably fewer people. There is thus not much potential for overlap as people appear to access very different topics on Spiegel Online. The topics reported in Table 10 reflect some of the major political events of the time, but also document the viral success of one single article: a story and matching slideshow about a German paramedic in Saudi Arabia. It also appears in the charts of the online trend site 10000 Flies on 10 June, documenting that it was shared a lot via Facebook, Twitter, and Google+ at the time.¹⁴

The list of most popular topics also reveals that both hard and soft news are frequently read on Spiegel Online. In addition to the 11 most popular topics from

14 <http://www.10000flies.de/?date=2014-06-10>

Table 10, a wide range of content is accessed. For further background on the structure of topic popularity, Table 11 reports the proportion of sections beyond the top 11 topics. Next to traditional sections such as politics and economy, three interactive sections also account for a considerable proportion of the URLs in the data set. Overall, a wide range of articles is accessed, with soft news in the lead, both with regard to the number of people who read respective articles as well as the number of articles, which thus became part of the present sample: sports (covering other events than the World Cup) and miscellaneous, which is labeled “Panorama” on Spiegel Online.

Table 10: Most popular topics on Spiegel Online

Topic	Proportion of Spiegel Online users	Number of articles accessed
Men’s soccer World Cup in Brazil	30.0	720
Elections to the European Parliament	4.2	55
Ukrainian crisis	4.0	82
ISIS-related terror in Iraq and Syria	4.0	101
Cave rescue of injured explorer in Bavarian Alps	4.0	57
NSA scandal	3.2	52
Pentecost weekend storms in North Rhine-Westphalia	3.1	16
European debt crisis	3.0	31
A German paramedic in Riyadh (miscellaneous article)	3.0	2
D-Day 70th anniversary, other anniversaries of WWII	2.9	34
Retired racing driver Michael Schumacher awakens from coma	2.7	7
n	1,779	8,002

The distribution of usership across sections (Table 11) as well as the top 11 topics (Table 10) already shows that even over the relatively small number of 8,002 content items, there is a lot of potential for a dispersion and subsequent fragmentation of users. Users of Spiegel Online need not see the same content on the platform, and not even the homepage appears to be able to trap an audience for topics that everyone sees, as only about one in five users from the current sample visit the homepage. When studying the actual overlap for content items (RQ9), the level of topics seems an adequate choice. Single articles are too numerous,

Table 11: Distribution of content accessed by Spiegel Online users

Section	Proportion of users*	Proportion of articles**
<i>Traditional sections</i>		
Politics	21	7
Economy	17	4
Culture	17	4
Digital	12	3
Miscellaneous (“Panorama”)	29	9
Science	12	4
Sports	31	2
<i>Interactive sections</i>		
Forum	7	13
Quiz	2	11
Sports bets	1	6
<i>Other</i>	–	35
(of which: Top 11 topics [see Table 10])	38	14)
n	1,779	8,002

* Users can access multiple sections, therefore no meaningful value for “other” sections can be given.

** Top 11 topics are not included in the proportion for sections under which they appeared.

with one event sometimes being covered by a number of articles over the course of a single day, while whole sections are too diverse in terms of specific topics with which users come into contact over the course of one month. Journalistic coverage of a current event, on the other hand, will often give background information and repeat facts across a range of different articles, and thus make people at least aware of some shared aspects of an unfolding event. Therefore, overlap is examined for the 11 most frequently accessed topics from Table 10.

This list includes many topics that span across weeks, months, or even years, such as the Ukrainian crisis or the European debt crisis. Others relate to shorter, more clearly delineated single events, such as the aftermath of storms in the state of North Rhine-Westphalia on Pentecost Monday. Compared to the news value of these topics, it appears even more impressive that one individual story about a German paramedic in Riyadh reaches a comparable level of usership. When we consider the pairwise overlap between the audiences of the top 11 topics, however, this story fares quite differently than the broader topics, which usually comprise a range of articles over a longer period of time and thus should have a larger chance of finding an audience. Table 12 shows the associations between all pairs of the 11 most frequently accessed topics. For better readability, associations with $\phi > .25$ are depicted in Figure 7, with the size of the dots representing the value of the phi coefficient. All depicted associations are significant at a p-level of .001.

The strongest association exists between the audiences of two international topics: the Ukrainian crisis (rank 3) and ISIS-related terror in Iraq and Syria (rank 4; highlighted by a white circle in the Figure). Thirty-two users clicked on at least one article pertaining to each topic, which corresponds to $\phi = .42$. As can be seen, the other political topics that reached about three to four percent of Spiegel Online users (see Table 10) also show a number of comparatively strong associations with hard-news topics of this kind (black dots in Figure 7). Two soft news items that reached an audience comparable in size also overlap with other topics (depicted in gray and with a black/gray gradient): the rescue of an injured cave explorer and the aftermath of the Pentecost weekend storms. The story about the paramedic does not show a lot of overlap with other topics; and news items about former racing driver Michael Schumacher awakening from a six-month coma, although popular in general, do not overlap with any other top content on Spiegel Online. Overall, there seems to be a cluster of hard news

Table 12: Association of topics on Spiegel Online via shared usership (phi coefficients)

Topic	1	2	3	4	5	6	7	8	9	10	11
1 Soccer World Cup		.185***	.119***	.179***	.211***	.132***	.150***	.193***	.058*	.154***	.158***
2 Elections to European Parl.		.354***		.286***	.300***	.200***	.235***	.354***	.128***	.282***	.120***
3 Ukrainian crisis				.424***	.250***	.287***	.192***	.296***	.132***	.255***	.089***
4 ISIS-related terror					.296***	.305***	.292***	.299***	.167***	.275***	.090***
5 Cave rescue						.224***	.226***	.299***	.184***	.292***	.179***
6 NSA scandal							.205***	.265***	.118***	.179***	.108***
7 Pentecost storms								.250***	.271***	.258***	.208***
8 European debt crisis									.142***	.186***	.051*
9 German paramedic in Riyadh										.227***	.073**
10 D-Day 70th anniversary											.096***
11 Schumacher awakens											
n	534	75	72	71	71	57	56	54	53	51	48

* $p < .05$; ** $p < .01$; *** $p < .001$

topics that attract a common audience, in this case dominated by international politics, while even highly popular soft news articles produce more scattered patterns of readership.

The most interesting finding, however, concerns the soccer World Cup. In terms of the overall audience, it is by far the single most viewed topic (reaching 30% of all Spiegel Online users), and a page of live scores is the second most viewed individual page (5%) after the homepage. However, the World Cup audience does not substantially overlap with any of the other 10 top-ranked topics. There is, however, an overlap between accessing articles about the World Cup as well as the homepage ($\phi = .32$; $p < .001$). But users who came to Spiegel Online for coverage about the tournament are not generally trapped into clicking on other articles covering hard or soft news.

For Spiegel Online, the answer to RQ9 is thus two-fold: Apart from the soccer World Cup, the overall audiences for current events are rather small on the news sites, with no more than three to four percent of the entire usership for even the most prominent, arguably most relevant, topics of the time. Those who click on articles about these top events, however, tend to read about more than one topic and select a range of content items, both hard and soft news (RQ10).

Information about the users in the sample is, unfortunately, rather limited. Demographics for users of the homepage, of World Cup content, any of the six top hard news items, and any of the four top soft news items from Figure 7 are given

Figure 7: Association of topics on Spiegel Online via shared usership (ϕ coefficients $> .025$)

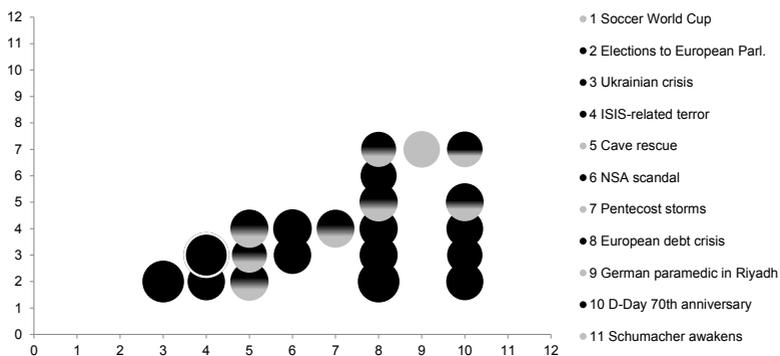


Table 13: Characteristics of topic-specific audiences on Spiegel Online

	Users of home- page	Users of World Cup content	Users of top 6 hard news	Users of top 4 soft news	All Spiegel Online users
Age (mean)	43.6	41.5	43.8	45.0	41.0
Gender (%)					
Female	33	33	26	43	39
Male	67	67	74	57	61
Education** (%)					
Primary school or less	8*	9	8	8*	13
Some secondary school	22*	31	29	35*	35
Completed se- condary school	71*	60	63	58*	52
Household income (%)					
Up to €18,000	18	27	21	25*	25
€18,001–27,000	17	15	17	13*	19
€27,001–36,000	12	15	15	11*	17
€36,001 or more	53	43	47	52*	39
Children living in the household (%)	24	22	17	20	26
n	341	534	222	173	1,779

* Rounding error.

** The three levels of education correspond to the German degrees “Volks-/Hauptschulabschluss,” “Realschulabschluss/Mittlere Reife,” and “(Fach-)Abitur,” respectively.

in Table 13 (RQ12). The columns in the table are not mutually exclusive, given the level of overlap just discussed. On the aggregate level, there is a substantial and statistically significant overlap between all combinations of the four types of

content reported in the table, except for users of World-Cup-related content that do not substantially overlap with users of top hard or soft news.

Given the overlap between these four groups, it is not surprising that there are only a few clear-cut differences. What stands out are gender differences, with men accessing the homepage, content about the soccer World Cup, and top hard news more often, while women select top soft news more frequently. Users who accessed the homepage and those who clicked on hard news also tend to have a higher level of education and higher income, while the usership of the World Cup has the lowest income. These are only very rough-hewn descriptions, but they are in line with previous survey-based research about different levels of interest in information on current affairs (Bernhard, Dohle, & Vowe, 2014; Hölig & Hasebrink, 2014; van Eimeren, 2015), soft news (Knobloch-Westerwick, Brück, & Hastall, 2006), and sports, in particular soccer (Rühle, 2012), among the respective social groups in Germany.

7.5.2 *Overlap of usage on YouTube*

As stated in section 7.4, usage of YouTube is studied on the level of channels, instead of single videos. The vast majority of videos (87%) is only watched by one person, which does not leave a lot of room for overlap. So as with Spiegel Online, where articles have been subsumed under their main topic, the YouTube data are aggregated. The level of channels seems appropriate as videos within a channel usually belong to one genre and often, especially for user-generated videos, feature the same protagonists. Even if two users have not seen the exact same video on a channel, they will generally have come into contact with the same *type* of content. Given the variety of video genres accessible via YouTube, this appears to be a sensible reduction of the variance in the data.

Table 14 gives an overview of the 13 most popular YouTube channels in the data set. The highest reach of a channel is 4.4 percent, again illustrating that even on this aggregated level, there is not much potential for overlap—and in contrast to Spiegel Online, the soccer World Cup does not bring together a large audience on YouTube, at least not at first sight. In fact, music channel Digster Pop and comedy channel MySpasde made it into the list of top YouTube videos in June 2014 due to World-Cup-themed songs. Other songs from the charts of the time bring Chimperator Channel, lokallegend, Our Rulez Music, and Warner

Table 14: Most popular channels on YouTube

Channel	Genre	Proportion of YouTube users	Number of videos in the data set
Digster Pop	Music (charts; subsidiary of Universal Music)	4.4	30
Chimperator Channel	Music (hip hop)	4.2	76
Gronkh	Video games (let's play)	4.1	695
Kontor.TV	Music (dance)	3.9	219
AGGRO.TV	Music (hip hop)	3.1	274
ApeCrime	Comedy (user-generated content)	3.0	175
MySpasde	Comedy (produced by subsidiary of TV production company Brainpool)	2.9	316
lokallegend	Music (charts)	2.7	1
KinoCheck	Movies (trailers, reviews)	2.6	302
LeFloid	Vlogs on current events	2.6	90
Our Rulez Music	Music (charts)	2.5	1
PietSmiet	Video games (let's play)	2.5	908
Warner Music Germany	Music (charts)	2.5	37
n		8,147	244,925

Music Germany to the top, sometimes with just a single song. As can be seen in Table 14, these channels have only a comparatively small number of videos in the data set, while the success of other types of channels seems to be driven by other factors. Some channels of professionally produced content publish a far higher number of videos (as reflected in the data set), but they often cater to a niche audience, rather than the music mainstream (e.g., with subgenres of hip hop, such as music label AGGRO.TV).

Another group of channels, however, differs far more from these patterns and contains types of content unfamiliar in other audiovisual media, such as television (Burgess & Green, 2009). So-called YouTubers or vloggers, mainly young adults, produce videos in a (seemingly) bedroom or living-room setting on a variety of topics. Three types appear among the top 13 channels of the sample, which represent some of the most popular YouTube genres in Germany (Goldmedia, n.d.; webvideo.com, 2013)—which is why three such videos were included in the survey about content awareness presented in section 6.2: Gronkh and PietSmiet mainly post “let’s play” videos (Ackermann, 2017b), for which they capture the content of their computer screen while playing a video game and comment on their experience while playing. Both channels publish hundreds of videos per month, and while most of them find a much smaller audience than, for instance, music videos from the current charts, the channels’ viewer base is large enough to bring them to the list of top YouTube channels in the data set under study.

Yet a different approach is followed by ApeCrime, a comedy troupe who make different kinds of videos, among others parodies of music videos, games, and challenges with other YouTubers, or humorous lists, for instance “ten amazing facts about alcohol.” These videos typically feature opening credits, visual inserts, fast edits, and often sound effects, which require time and effort, but can still be done without professional recording and post-production equipment. This is also the case for the last example, LeFloid, who posts vlogs (video blogs) containing commentary about current events, mostly with a youth-related angle. Popular videos of his in June 2014 cover, for instance, the pitfalls of sexting and digital surveillance, both linked to specific news items of the time. ApeCrime and LeFloid do not upload as many videos as the let’s players Gronkh and PietSmiet, but their most popular videos draw a larger proportion of viewers.

Finally, one channel is also represented with many videos in the data set, in this case movie trailers and reviews, but the maximum number of viewers for any of the posted content items is very small. The highest number of users for a single video from this channel is only 20 people who watched the trailer for the movie *The Fault in Our Stars*. But among the roughly 300 videos from KinoCheck in the current data set, there are enough popular clips to bring the channel to the top 13 list.

The description of the top content already reveals quite large differences in the topics and styles of popular German YouTube videos from June 2014. With regard to the overlap of audiences for these content items (RQ9 and 11), it should

come as no surprise that there is hardly any. Table 15 shows the pairwise overlap between the audiences of the 13 most popular channels, and Figure 8 highlights the substantial associations only ($\phi > .25$; $p > .001$).

The largest overlap appears for the two music channels Digster Pop (rank 1) and Chimperator Channel (rank 2), which have a combined audience of 111 users, resulting in a ϕ coefficient of .29. Especially the two channels of major music labels, Digster Pop (a subsidiary of Universal Music) and Warner Music Germany (rank 13), overlap with other music channels (black dots), but not dance music channel Kontor.TV or hip hop channel AGGRO.TV, although both of these have large audiences themselves, ranking them in 4th and 5th place, respectively. Comedy channel MySpasde and movie channel KinoCheck also show no substantial association with any of the other top channels, while among the YouTubers, four pairs show overlap (gray dots). Gronkh's viewers (rank 3) also watch videos from the other gaming channel PietSmiet (rank 12) as well as vlogger LeFloid (rank 10), who additionally shares viewers with comedy channel ApeCrime (rank 6).

So although the audiences of popular YouTube channels are larger in absolute numbers than those for topics on Spiegel Online and attract about the same proportion of users in the respective samples, and even though more channels than news topics reach this level of popularity, fewer overlaps can be observed. The YouTube audience thus appears to be highly fragmented.

This is also apparent when comparing the makeup of the audiences from the two types of channels that at least tend to attract a common audience: music videos and vlogging (RQ12). Table 16 shows differences between users of the overlapping music channels Digster Pop, Chimperator Channel, lokallegend, Our

Figure 8: Association of videos on YouTube via shared usership (ϕ coefficients $> .025$)

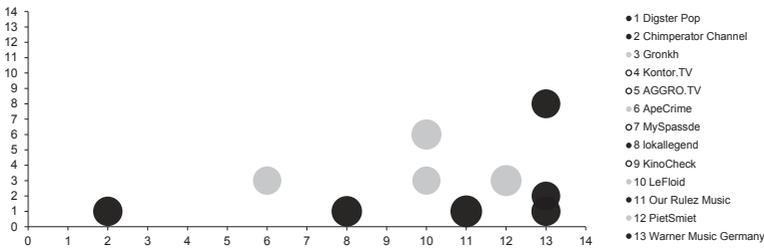


Table 15: Association of videos on YouTube via shared usership (phi coefficients)

Topic	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Digster Pop		.286***	.037**	.218***	.128***	.127***	.116***	.309***	.047***	.037**	.334***	n.s.	.282***
2 Chimperator		.085***		.185***	.212***	.226***	.115***	.244***	.091***	.073***	.247***	.076***	.272***
3 Gronkh			.083***	.106***	.106***	.266***	.089***	.046***	.121***	.262***	.050***	.317***	.031**
4 Kontor.TV				.184***	.105***	.105***	.071***	.242***	.066***	.067***	.163***	.046***	.160***
5 AGGRO.TV					.138***	.074***	.074***	.124***	.064***	.105***	.139***	.085***	.090***
6 ApeCrime						.139***	.108***	.108***	.074***	.300***	.091***	.211***	.101***
7 MySpassde							.057***	.057***	.076***	.104***	.089***	.080***	.075***
8 lokallengend								.044***	.044***	.035***	.221***	.027*	.276***
9 KinoCheck										.118***	.047***	.087***	.043***
10 LeFlويد											.028*	.242***	n.s.
11 Our Rulez M.												n.s.	.232***
12 PietSmiet													n.s.
13 Warner Music Germany													
n	357	345	335	316	252	247	239	219	214	211	204	202	202

n.s. not significant, * $p < .05$; ** $p < .01$; *** $p < .001$

Rulez Music, and Warner Music Germany versus top vlogging channels Gronkh, ApeCrime, LeFloid, and PietSmiet. (Again, note that the columns in the table are not mutually exclusive, as 201 users accessed both at least one music and one vlogging channel.)

Most noticeable are the differences in age, gender, and income. Both genres attract a younger and less affluent audience than does accessing YouTube in general. Men are overrepresented among the viewers of top music and vlogging chan-

Table 16: Characteristics of genre-specific audiences on YouTube

	Users of top music channels	Users of top vlog channels	All YouTube users
Age (mean)	31.5	31.9	38.0
Gender (%)			
Female	40	30	42
Male	60	70	58
Education** (%)			
Primary school or less	23	21	21
Some secondary school	41	38	40
Completed secondary school	36	41	39
Household income (%)			
Up to €18,000	38*	36*	30*
€18,001–27,000	23*	20*	21*
€27,001–36,000	15*	18*	17*
€36,001 or more	25*	27*	31*
Children living in the household (%)	27	25	25
n	981	672	8,147

* Rounding error.

** The three levels of education correspond to the German degrees “Volks-/Hauptschulabschluss,” “Realschulabschluss/Mittlere Reife,” and “(Fach-)Abitur,” respectively.

nels, especially for the latter genre. While music from the then current charts can be assumed to have a broad appeal, the young and predominantly male audience for vlogging channels is in line with findings on YouTube in general (Feierabend et al., 2014; Kupferschmitt, 2015), as well as video games (Quandt, Breuer, Festl, & Scharnow, 2013), which is the main topic of two of the vlogging channels. The most popular content on YouTube thus seems to draw specific groups of users rather than a representative selection of all users of the platform.

7.6 Summary and discussion

A closer look at the use of content within platforms reveals that a “massively overlapping culture” (Webster & Ksiazek, 2012) is not self-evident on the Internet—and it may be difficult to realize integrative potential online even if a given content may lend itself to unfold some, for instance due to its topic being related to an important political issue or carrying relevant metamessages.

In a long-tail environment, the most popular content items on the most popular platforms should be most likely to create overlap among online audiences. Yet the analyses in the current chapter show that for two of the most highly frequented websites in Germany, this is hardly the case. While for Spiegel Online, there is an audience who access a variety of hard news about the major current events of the time, this is only a small fraction of the platform’s users. It appears that only a media event like the men’s soccer World Cup can attract a large part of the users. Without the tournament and the respective users, the makeup of Spiegel Online users would probably look quite different. Proportion-wise, there might be more overlap, as the top political news would have a chance to attract more than just four percent of the platform’s users. But on the flip side, the user-ship itself might be considerably smaller as well.

The findings on overall content popularity are in line with Tewksbury’s (2003) study of online news use. He showed that many readers of news sites report a great interest in hard news about national and international politics, but actually access respective articles much less frequently than, for instance, sports coverage or entertainment news. While many of the most frequently read articles on Spiegel Online are related to hard news, the sports and miscellaneous sections are

visited by about one in three readers each (even without World-Cup coverage), while politics is accessed by about one in five (see Table 11). This confirms findings about the higher popularity of soft news from previous studies (Boczkowski & Mitchelstein, 2012; Bright, 2016; S. E. Jarvis & Stephens, 2015; Tenenboim & Cohen, 2015; Wendelin et al., 2017).

A news site like Spiegel Online thus apparently does not only (or even mainly) attract users with its hard news coverage, and some may end up on the site for very different types of content and reasons. What the analysis of clickstream data affords, in contrast to surveys or aggregated rankings of the most frequently read articles on news sites, is to establish what the readers do after they have arrived on a respective site. Interesting to note in this regard is the success of the article about a German paramedic in Saudi Arabia. It was heavily shared on social media platforms and thus made it into the list of top 11 topics. Yet the people who access this article and the respective slideshow hardly overlap with the rest of the Spiegel Online users (see Figure 7). This matches the finding from section 6.2.1, where heavy users of social network sites have been shown to be aware of more viral online content, but less hard news (see Table 5). Social network sites can bring people to all kinds of websites and serve as content distributors, but this does not necessarily mean that the users will access other content on the target platform as well.

These findings are also sobering with regard to a possible trap effect (Schönbach & Lauf, 2002, 2004; Trilling & Schönbach, 2015) of soft news—or even the homepage of a major news site. While being the most frequently visited page on Spiegel Online, using the homepage is not substantially related to accessing political content. There is an overlap between the homepage and World-Cup-related coverage. So, of course, users going to spiegel.de for information about the soccer tournament may see headlines and teasers for other topics when accessing the homepage. But this will hardly lead to an in-depth understanding of the underlying political event, as most users do not start reading hard-news articles.

On the other hand, the World Cup appears to serve as a “virtual fireplace” around which a large audience can gather and share excitement or frustration, depending on how one’s favorite team fares. But this is not only brought about by a single site like Spiegel Online, as many other media will also cover the event excessively, and television ratings for soccer matches typically outrank all other programs in World-Cup years (ratings for the 2014 World Cup in Germany are

reported by Zubayr & Gerhard, 2015). From an economic point of view, it is a rational decision to publish a lot of material about the World Cup, as it is a big driver for traffic on Spiegel Online (and probably many other platforms as well as offline media). In this regard, it should be noted that the coding for content used in the current analysis results in a conservative estimate for World-Cup-related usage, as sports bets were not included, but led to many clicks on Spiegel Online (Table 11). More content on the World Cup means more opportunities for advertisement as interest for the underlying event is fairly high. But it appears doubtful whether the users who come for soccer-themed content will stick around for other topics—or come back once the tournament is over.

While the patterns of usage on Spiegel Online clearly document users' interests in the content on offer, it would be wrong to conclude that users who do not read articles about current events on the site are not up-to-date about important political and societal matters or have no interest in politics. As was discussed in Chapter 6, people combine a variety of media in their everyday repertoires and Spiegel Online is of course not the only source for information on current affairs (Hasebrink & Schmidt, 2013). Comparing the high level of news awareness found in section 6.2 with the small proportion of Spiegel Online users who access hard news articles, there have to be other, more important sources for news. The small group of users with a broader appetite for news on Spiegel Online can hardly be expected to inform all the others about current events. Instead, maybe users who came to the news site felt already well-informed about the topics they saw on the homepage or in the sidebar next to articles they wanted to read. They may in fact have already read about an event or issue in their morning paper, heard about it on the radio while at work, or chose to wait for the evening TV news they always watch. In this regard, news sites may be used for very specific purposes, which lead to the observed patterns of usage. Maybe people only scroll through headlines to stay up-to-date about the most recent developments in current events, but seek deeper information elsewhere later on. They may also just click through to an article, video, or slideshow that interests them, but prefer other sources for other types of content. This would have to be studied further using other methods, for instance focus groups or observational data that span across more than one news source. In any case, even a popular site like Spiegel Online is likely not a strong contributor to the comparatively high levels of awareness for news that have been documented in section 6.2. Yet, a limitation of the data set in this regard also needs to be taken

into account, as only usage on stationary computers at home was recorded. Internet use at work or on mobile devices, including apps, was not assessed. If this were the case, more overlap for use of hard news might be observed, as smartphones are often used for news on current events (Müller, 2013).

A similar pattern may be true if mobile use were included for YouTube, where the lack of overlap between or fragmentation of the users is even more pronounced. There are of course many more content items accessible via the platform, but even the most popular videos only attract about four percent of the usership. The most popular channels are clearly entertainment-oriented, and here, preferences seem to vary greatly among the users. YouTube probably has something on offer for anybody, but every user appears to be attracted to a unique combination of videos. Only songs from the charts and highly popular vloggers seem to be able to attract a large(r) crowd. YouTube use thus appears to be very much driven by individual choice, interest, and taste. The small reach within the YouTube usership of vloggers Gronkh (4.1%) and LeFloid (2.6%) also explains to a certain degree why so few respondents in the survey presented in section 6.2 recalled watching their then current videos.

The extant literature on content choice within online video sites does not allow comparing whether the YouTube content preferences of the Nielsen panel are consistent with previous results or not. However, the findings on the local foci of video popularity (Brodersen et al., 2012) and similarity of users who watch the same content (Xiao et al., 2012) hint toward the role of social sharing for YouTube use (see section 3.3), which may also explain the usage patterns reported above. Apart from music from the then current charts, many of the videos may have been recommended by other users and thus spread within interpersonal networks. And, under such circumstances, it may happen only rarely that a video reaches an audience that connects many of these networks. Usually, tastes in online videos are apparently highly individual and thus create only very limited levels of overlap.

That genre preferences can differ widely for audiovisual content or music is not unique to YouTube, of course (Jonathan Cohen, 2002; Rentfrow et al., 2011). But online platforms leave much more room to indulge people's genre preferences than, for instance, television. YouTube may be extreme in its openness with regard to content. Yet other new forms of offering audiovisual entertainment to an audience are beginning to reflect the large variety of viewer interests as well. The video-

on-demand service Netflix, for instance, organizes its content along the staggering number of 76,897 micro-genres, such as “Visually-striking Foreign Nostalgic Dramas” or “Critically-acclaimed Emotional Underdog Movies” (Madrigal, 2014). Online environments are particularly well-equipped to answer to the underlying idiosyncratic interests of viewers (Anderson, 2006), as discussed in sections 3.2 and 3.3. With regard to the integrative potential of such offerings or even simply overlap of users, however, the outlook appears rather bleak.

What is interesting to note for YouTube in Germany beyond the lack of overlap is the duality of success factors at the top. On the one hand, self-made vloggers, who were the first to populate the platform (Burgess & Green, 2009; van Dijck, 2013), can enjoy the same level of success as major music labels such as Universal or Warner, on the other. It may be that the latter have brought more mainstream users to YouTube (including more women), but interestingly, they were not followed by the powerhouses of audiovisual content producers, at least not successfully. Most German television channels have their own online video archives, so they do not need YouTube as a distribution platform. But this makes it even more unlikely for YouTube to fulfill its integrative potential as one of the most frequently visited sites in Germany (and many other countries). If there is mostly niche content available on YouTube, the videos accessible via the platform cannot be expected to attract a large audience. And for integrative effects to be realized, YouTube users would have to come into contact with at least partly the same content, rather than just the same technical platform to access a highly individual selection of videos. Again, of course, media users in Germany by far do not only go to YouTube for audiovisual entertainment (Koch & Liebholz, 2014). But a media repertoire that leans heavily toward online platforms (including TV archives or video-on-demand services) can be expected to create much less overlap than linear television, even in multichannel environments.

The two platforms that have been selected for the current analysis are, of course, mere exemplars of what is available online. As stated above, both are content-heavy, so not focused on features for interactive communication with other users or services like a search engine, translation service, or currency converter. But YouTube and Spiegel Online are also very different from one another. The video platform is not run by an editorial team, nor dominated by content produced by professionals within a media organization. Neither is there a top-down planning of when to run which larger stories. Instead, YouTube shows users an (automati-

cally) curated selection of content, and the recommendation feature is an important factor in explaining the number of views per video (Zhou et al., 2010). This again underlines the interaction between users' agency and platform structure (see Chapter 7.2). The data studied in the current chapter are a reflection of both, as they document what users clicked on and what content was popular with this audience. But only content that preexists on the platform can be selected. So, if 30 percent of Spiegel Online users clicked on articles about the soccer World Cup, what was the offering of the site about this event at the time?

A closer look at the content of the two platforms could also help to check to what degree the analyses of overlap presented here may be unique for the users in the Nielsen panel. As shown above, most news topics and all of the popular YouTube channels were only used by a minority of users, while especially YouTube videos were usually only accessed by a single person. Which videos made it into the Nielsen data set thus heavily depends on the sample. If we take a wider look at YouTube and Spiegel Online beyond this relatively small selection of users, what are the broader topics that become popular on YouTube in Germany? And what did the news offer on Spiegel Online look like, compared to what people used? These questions will be addressed in Chapter 8, to better understand why so little integrative potential was realized through user overlap on these two sites.

8 Content analysis: Online content structures¹⁵

The analysis of usage behavior within the platforms Spiegel Online and YouTube has revealed how much (presumed) individual interest in, for instance, soccer or certain types of music can drive traffic within platforms. Yet what content is available at the time is an important prerequisite for usage, as it concerns structures that are pertinent for people's usage choices (see section 5.1). A low degree of overlap between users of a site can indicate unrealized integrative potential. The prerequisites for integrative effects may, however, depend on the technical features of the site as well as the content on offer.

In this regard, the two selected websites are quite different, but represent two important types of online platforms. How online news may differ from their presentation in traditional media has been studied by numerous scholars (e.g., Hasebrink et al., 2013; Oschatz, Maurer, & Haßler, 2014; Quandt, 2008; Range & Schweins, 2007). For the German market, they usually identify Spiegel Online as one of the leading online outlets that many competitors try to emulate (Hasebrink et al., 2013). Like traditional news media, the editorial team of the site bundles content deemed relevant and interesting for their readers and serves as an agenda-setter. In this regard, the popular news site may enable integrative effects in terms of shared usage, awareness of current events, and political knowledge. If Spiegel Online's offering focuses more on soft news, however, the users can hardly be blamed for primarily accessing respective content, as documented in section 7.5.1.

The structure of a video platform such as YouTube is of course very different from that of a news site and epitomizes what Anderson (2006) describes as

15 A broader analysis of popular YouTube videos was presented at the 2014 annual conference of the DGPK division Sociology of Mediated Communication and has appeared in the conference proceedings (Mahrt, 2017b). Parts of the literature review are also included in a qualitative study of two YouTube channels popular among German youth (Bock & Mahrt, 2017).

the economy of the long tail (see section 3.2). The vast amount of content available online via different websites, but also within large platforms, mostly independent of time and space, offers much more choice in terms of items to select, while the technical structure of platforms requires users to search more actively for such content or customize the offering via subscriptions to content creators. Since traditional media need to attract a more or less mass audience to be economically successful, their content necessarily has to appeal to large numbers of individuals. Printed newspapers may thus, for instance, include diverse topics, events, and services in their different sections, while television outlets may try to offer mainstream-appropriate programs. Online, however, much more specialized content can be offered and may find its audience. Some see this as beneficial, both for the media economy, which may yield profits in smaller market niches in the long tail, as well as for the users who can enjoy more media offerings that match their preferences beyond the mainstream (see sections 3.2 and 3.3). Anderson advocates such business models as the end of the “hit culture” of middle-of-the-road media content and a subsequent deliverance of the users from mass taste. In terms of integrative potential, on the other hand, such structures may be more beneficial for bonding within niches rather than bringing together larger audiences.

The analyses of how users actually access YouTube and Spiegel Online have shown that there are still mass hits that become popular on online platforms (such as videos for songs from the charts, which attract a large audience) and also important political topics, which at least some users decide to learn more about. But for the news site, Chapter 7 has also documented that soft news and especially a media event like the men’s soccer World Cup attract a large audience in Germany, which from a normative perspective are hardly as relevant as, for instance, the Ukrainian crisis or terror and civil war in Syria. The question remains to what degree this is due to editorial decisions of Spiegel Online or rather users’ behavior. How much do the platform’s content structures thus impact usage?

Additionally, YouTube usage beyond a few more widely used offerings has been shown to be very idiosyncratic, which makes it hard to establish if the results from the previous chapter are representative of the entire usership of YouTube or merely due to the composition of the sample of users. Thus the content structures of both platforms should be taken into account when assessing their integrative potential.

8.1 Content on Spiegel Online

As stated above, Spiegel Online is widely considered one of the leading news media in Germany (Bönisch, 2006; Hasebrink et al., 2013; Range & Schweins, 2007). Started in 1994, it is the oldest German news site and among the most often cited online news sources (Hasebrink et al., 2013). Due to its success, it can run on advertising revenue, and the site has only recently, in June 2016 (Bouhs, 2016), introduced a paywall for select articles (for years, only content from the respective current printed Spiegel magazine had to be paid for online or was reserved to subscribers). The platform thus appears to aim at maintaining its dominant position in the German market by sticking to its strategy of predominantly free online content. And even its design is still rather conservative and does not follow the newest fashions of website design (Range & Schweins, 2007).

The site's content focuses on the sections typical of newspapers: politics, economy, culture, sports, and human interest (Quandt, 2008). However, the latter category takes up a considerable proportion on the site, among others with the already mentioned slideshows on (mainly) current events (Oschatz et al., 2014). Given the many articles about celebrities, crime, disasters, and other typical soft-news topics as well as its often rather informal language, Range and Schweins (2007) characterize Spiegel Online as a "smart tabloid" (p. 43). In 2010, Spiegel Online published about 106 articles per weekday and 52 per day on weekends (Hasebrink et al., 2013), which again is rather stable compared to a few years ago (Bönisch, 2006).

8.2 Content on YouTube

YouTube claims to accommodate over a billion users worldwide who generate an accumulated daily amount of billions of views, equaling hundreds of millions of hours of screen time.¹⁶ As stated in sections 3.2, 3.3, and 7.2, usage of YouTube videos is very unevenly distributed. In a random sample of 250,000

16 According to <https://www.youtube.com/yt/press/statistics.html> (11 April, 2017).

YouTube videos, only 10 percent of the videos accounted for 80 percent of all views (Cha et al., 2007). A more recent analysis of all German YouTube channels with at least 500 subscribers showed that the top one percent alone generate as much as 49 percent of views (Goldmedia, n.d.). The popularity of YouTube videos is correlated with different factors, for instance their geographical origin. This is in part likely due to language and relevance of content, but also because sharing of videos among users leads to a considerable number of views (Brodersen et al., 2012).

YouTube started out in 2005 as a platform for mainly user-generated videos and had a comparatively strong community of content creators in the early days who also frequently interacted with one another (Burgess & Green, 2009; van Dijck, 2013). In late 2011, the platform began to change its policy to better accommodate professional content creators and facilitate watching behavior more akin to television (van Dijck, 2013). At this time, the amount of content available had already grown so much that no comprehensive overview was feasible. Subsequently, many studies of YouTube content tend to look at the most popular videos rather than the offering available in general. For Germany, comedy, video games, music, and beauty/fashion vlogs have repeatedly been identified as the most popular content categories (Goldmedia, n.d.; webvideo.com, 2013; note that music, video games, and vlogs were also the most watched types of content in section 7.5.2). While these studies tackle the diversity of YouTube videos by categorization, a different approach goes for a more in-depth analysis of select content.

A number of case studies have examined content niches on YouTube, for instance pertaining to the depiction of ethnic minorities (Guo & Lee, 2013; Kopacz & Lee Lawton, 2011) and homosexuality (Christian, 2009; Ciscek, 2012; Muller, 2011), but also to activities such as graffiti (Light, Griffiths, & Lincoln, 2012), dance (Carroll, 2008; Eisemann, 2015), computer games (Ackermann, 2017b), and applying makeup (Anarbaeva, 2016; Fischer, 2014; Kennedy, 2016), or fandom of comedy performers (Erhart, 2014). The studies show that presenting non-mainstream images of social groups or activities is what makes the respective videos popular, especially among members of these groups or participants of said activities. The platform provides these users with the ability to present images of themselves to the world, which may differ from typical mass media portrayals or fill gaps as certain groups or activities may usually be ignored there. It is likely that most YouTube users never even come across most niche videos, because they sit some-

where in the long tail of YouTube content. In this environment, viral phenomena, like the 2010 “It Gets Better Project” intended to support struggling LGBTQ teenagers (Ciscek, 2012; Muller, 2011), are an exception, not the rule, as most videos are not widely watched. Yet the technical features of YouTube still allow for cohesion within audiences.

Rotman and colleagues (Rotman, Golbeck, & Preece, 2009; Rotman & Preece, 2010) investigate this phenomenon via a two-pronged approach: an analysis of network relationships visible on YouTube (subscription to channels, comments on a channel’s videos, video answers) and a content analysis of how content creators talk about the YouTube community in their videos. The structural analysis of actual (visible) YouTube interactions shows only small and scattered communities, which appear to be random. On the other hand, active content creators report strong feelings of attachment to a perceived YouTube community. So, niches may not be as successful as viral hits, but they can bring together audiences nonetheless, beyond mere numbers. Integrative potential may thus be unfolded more via bonding within than via bridging across niches.

8.3 Research questions

The analyses presented in Chapter 7 have revealed distinct patterns of content choice among the users of Spiegel Online and YouTube. On the former platform, the soccer World Cup, international politics, and soft news were most popular, while on the latter site, music videos and vlogs were most often watched. But how do these patterns compare to the actual offering of content? Thus, to what degree do content structures influence usage—and formation of larger audiences?

The reciprocity of relationships between users’ behavior and media structures is discussed in structurational theory (Webster, 2011). It stresses that neither users nor media are independent of one another. Users may be active in the sense that they have motives for their actions and may seek out media to satisfy their needs (Greenberg, 1974; McQuail et al., 1972) or to find confirmation for their worldviews (Festinger, 1957; Freedman & Sears, 1965; Sears & Freedman, 1967). Their choices with regard to media, however, are restricted by the available offerings, which thus also limit their agency. At the same time, media organizations

depend on users as well, since most media business models rely on revenue from sales, subscriptions, or advertising (Napoli, 2003). Thus, all commercial media must find an audience, which in turn forces them to offer content that manages to attract such an audience. This creates the reciprocity between user agency and media structures.

With regard to the integrative potential of media, their need for a sufficiently sized audience may be beneficial as they may aim at offering content that brings together large groups of people. In contrast, the results from Chapter 7 have shown that popular media content may not always be the most desirable from a normative point of view, for instance awarding precedence to soft news at the expense of hard news. It remains to be seen, however, to what degree the reported findings on popularity among users (as an expression of their agency) result from the content structures of the chosen platforms.

Given the different structures of the two selected sites, the available content may influence usage in different ways: While Spiegel Online as a whole certainly contains more content than any printed news medium could, the homepage is still organized along a manageable number of sections, and even about 100 new articles per day (Bönisch, 2006; Hasebrink et al., 2013) are not impossible to monitor for a user. For June 2014, the structure of the published content is compared to what the users selected most frequently in the following analyses, to assess to what degree their choices might be restricted or at least canalized by the decisions of the editorial team. This should ultimately serve to answer the question why Spiegel Online manages to create only a low level of overlap within its audience and to better determine the site's integrative potential.

RQ13: How are topics and articles distributed on Spiegel Online compared to users' choices?

For YouTube, a different approach is followed. The platform does not control what content is uploaded via an editorial team, and the amount of available videos is much larger than for the news site. YouTube thus relies on algorithms to organize content, with a range of functionalities. Among others, matching videos are displayed as "recommended" once a user has selected a content item; popular videos are shown in lists of "trends" in a given country; and signed-in users are automatically kept up-to-date about new videos in channels they have subscribed

to. Since the present study is interested in the integrative potential of media, the most frequently used videos will again be selected, this time to compare content with usage. The results presented in section 7.5.2 have documented very scattered patterns of usage, with the vast majority of videos and channels being accessed by only a single person. This means that results from clickstream analysis heavily rely on the characteristics and interests of the respective panel members. But are their choices really that individual or can structures of the video platform also influence the formation of audiences—which would be an indicator of YouTube’s integrative potential? Apart from the recommendation feature (Davidson et al., 2010; Zhou et al., 2010), the list of most watched videos is of interest in this regard. Current trends are displayed in several places on YouTube and are evidently supposed to draw more users to already popular content. While the platform’s goal is probably to increase video views in any way possible (and the growing popularity of a clip may mean that other people may enjoy it as well), this could create audience overlap and thus unfold integrative potential as a side effect. If this goal is achieved via the most-watched list, what was popular among the Nielsen users should correspond at least to some degree with what was trending on YouTube at the same time.

RQ14: What types of videos and channels are displayed as most popular on YouTube in Germany, compared to users’ choices from the previous chapter?

When studying such trends, the members of the Nielsen panel become, of course, part of the data set a second time, as their choices have influenced video success at the time. But given the wide reach of YouTube in Germany, the 8,147 users will not have impacted the overall YouTube trends much. The analysis of broader trends on YouTube in Germany should, on the other hand, allow for a validation of the findings from Chapter 7.

This study is interested in successful YouTube videos because they manage to attract a large audience. But it is important how success on YouTube is defined: The most-viewed videos of all time¹⁷ are largely music videos, which may receive

17 A list can be found at https://www.youtube.com/playlist?list=PLirAqAtL_h2r5g8xGajEwdXd3x1sZh8hC (11 April, 2017).

parts of their large number of clicks from people re-watching the video to a song they like. The most successful video has received over 2.8 billion views, while the video currently on rank 100 has been clicked about 779 million times, pointing again to a long-tail distribution of steeply declining popularity. Some of these overall top videos are a few years old, one even dating from 2007, while most others are fairly recent and have risen to the top over a matter of mere months. To make popularity a little more comparable and to increase the chance of capturing a more representative selection of popular YouTube content than only music videos, this study looks at the popularity of recently uploaded videos. YouTube ranks frequently watched new videos daily as “popular right now” on its website.¹⁸ Such lists are also available per country, via “YouTube Trends.”¹⁹ Videos popular in Germany in June 2014 can thus be compared to the content choices of users in the Nielsen panel, which helps to validate the representativeness of the data set used in Chapter 7.

However, it is not transparent how YouTube’s algorithms select videos for the list of trending clips. As Gillespie (2012) shows for the microblog Twitter, social media platforms are typically designed to give precedence to some content items over others. For instance, a ranking algorithm by definition needs to identify popularity in one way or another, and the parameters that are programmed into the platform naturally impact what becomes highlighted on the site and what does not. Sometimes users may have other expectations about what should be ranked highly, yet as Gillespie shows, it is impossible to know for third parties why certain items do or do not appear in lists of allegedly popular content. A study of YouTube content via (supposedly) popular videos thus equally depends on the platform’s selection mechanisms. However, the trends for different countries are shown to all the users from the respective regions, and thus may be among the technical features of the platform that contribute to the formation of larger audiences on YouTube—and ultimately to the unfolding of integrative potential.

18 <http://www.youtube.com/channel/UCF0pVplsI8R5kcAqgtoRqoA>

19 <https://www.youtube.com/feed/trending>

8.4 Method

Content structures on Spiegel Online and YouTube are examined via quantitative content analysis, combining manual and automatic techniques to store and analyze the items on offer in June 2014 on both sites.

Spiegel Online is updated throughout the day and well into the evening, with a gap usually between around midnight and 6 a.m. All articles published in June 2014 were manually downloaded through the site's news archive.²⁰ This resulted in 3,240 news items, which were automatically coded for their section and manually categorized for their main topic as expressed in the article's headline. All topics discovered in the analysis of clickstream data (see section 7.4) were included in the codebook, but the list of events was extended, so that 41 percent of all articles could be categorized under a main event (the extension of the codebook is documented in Appendix B). Only one topic was coded per article, which appeared sufficient since only five articles (0.2%) referred to two main topics (e.g., "Frankfurt stock exchange reacts to Ukrainian crisis and terror in Syria"). These were excluded from further analysis.

A random sample of 648 articles (20%) was independently coded by a second person, so that reliability could be assessed via Krippendorff's alpha. Reliability for the coding of the main topic was highly satisfactory with alpha = .93.

The top 10 videos ranked as most popular on YouTube in Germany in June 2014 were collected daily via the platform's own ranking of trending videos.²¹ The title and channel of the video as well as number of clicks were recorded once per day. Due to problems with the "Trends Dashboard," two days, 24 and 30 June, are missing from the data set. This illustrates how the chosen measure of popularity depends on YouTube providing a complete (and accurate) depiction of video popularity. In addition, it remains unknown which videos are considered by the platform as recent enough to be included in the top 10 or how viewing by country is determined by YouTube's algorithms (for a discussion of various ways to assess content popularity on social media platforms, see Gillespie, 2012). Without access

20 <http://www.spiegel.de/nachrichtenarchiv/>

21 Using the older interface for YouTube trends, the "Trends Dashboard," formerly available for Germany via <https://www.youtube.com/trendsdashboard#loc0=deu>.

to the platform's logs, there is, however, no other way to study video popularity than by YouTube's own accounts, but the results have to be interpreted with caution accordingly.

Videos that remained in the top 10 for more than a day are only counted once in the following analyses. This results in 245 unique videos that were among the top 10 for at least one day. The highest number of clicks a video received while in the top 10 is considered in the following.

The videos were manually coded in a standardized content analysis by a trained student coder (the codebook is reproduced in Appendix C). A second student coder independently categorized a random sample of 250 videos (21% of a larger list of videos from 2014, which is analyzed in Mahrt, 2017b). Reliability was again assessed via Krippendorff's alpha. Categories include genre or general topic of the video (alpha = .79), author (alpha = .93), and language of the video content (alpha = .85). Ten general genres and main topics were coded, designed to capture the most important trends in the German top 10 of June 2014: video games, everyday life vlogging (video blogging, where the content creator takes center stage in the video and mainly talks about everyday topics), music videos, humor (including funny animal or "fail" videos of mishaps), current events, YouTube series or trends (like top 10 lists), sports, celebrities, commercials, and television entertainment (for example clips from a TV series or late night show). Only one video did not fall into any of these categories. Subcategories were used for different styles of music (rock, pop, rap, and electronic music) and vlogging topics (like relationships, fashion and beauty, or work and school).

YouTube videos are uploaded to a channel, which is usually considered as the "author" of the videos. In a few cases, a person had two channels that appeared in the top 10. These were counted as one author. In the case of music videos, on the other hand, the artist or band featured in a single video was coded as the author, rather than the music label that operated the YouTube channel. In the following, only authors who had at least three videos in the top 10 during the month under study are considered.

Language of the video content was coded as German, English, other, or none (as typical of some "fail" or sports videos without spoken or written commentary in the video itself).

8.5 Results

What has been identified as most popular within the Nielsen panel in Chapter 7 is compared in the following sections to the articles and videos that were available on Spiegel Online and ranked as popular on YouTube, respectively. Structures of the content on offer are analyzed first for the news site, then for the video platform, to assess the relevance of news and popularity of videos in an alternative way than via clickstream data from a relatively small sample of users.

8.5.1 Content structure of Spiegel Online articles

With 3,240 articles, the Spiegel Online news archive contains considerably fewer items than were accessed by users in the Nielsen panel. But as was shown in Table 11, three interactive sections accounted for 30 percent of clicked URLs (almost 2,900 pages). In the news archive, there is one announcement for the interactive sports bets feature, but quizzes and forum threads are not included in the archive. In addition, the Nielsen users occasionally also clicked on older articles on an event (e.g., contemporaneous articles on racing driver Schumacher's accident in December 2013, which led to the coma from which he awoke in June of the following year). In some cases, the Nielsen data contain two URLs on the same article because the latter consisted of text plus a slideshow or video, but the news archive only holds one entry for both.

Compared to older studies (Bönisch, 2006; Hasebrink et al., 2013), slightly more articles were published per day on Spiegel Online in June 2014: On average, 127 articles appeared on weekdays and 69 on weekend days. The distribution across sections of these articles is given in Table 17, also for the smaller sections, which are summarized in Table 11. For the sake of comparison, popularity of sections among the users in the Nielsen sample is reported as well (RQ13).

Over two thirds of the articles published on Spiegel Online in June 2014 stem from only four sections: politics, sports, miscellaneous, and economy. The first three are also the most popular sections among the users (albeit in a different order), where economy ranks fifth, closely behind culture. The articles available on Spiegel Online thus show a strong focus on hard news, which is not entirely matched by the choices of the users. The latter select soft-news items more fre-

Table 17: Distribution of content published on Spiegel Online

Section	Proportion of articles in news archive	Proportion of users in Nielsen data*
Politics	23.1	21.1
Economy	11.3	16.8
Culture	6.9	16.9
Digital	5.2	11.9
Miscellaneous (“Panorama”)	16.2	28.5
Science	4.9	11.6
Sports	20.0	31.2
Cars	2.0	7.5
Travel	3.1	8.2
Health	2.5	13.5
Career	1.6	8.8
Student life	1.5	7.3
School life	0.7	6.4
Contemporary history (“einestages”)	1.0	8.0
n	3,240	1,779

* Users can access multiple sections. Entries differ from Table 11 because usage of the top 11 topics is included for the respective section of the accessed content.

quently, with sports and miscellaneous in the lead. As can be expected from the findings in section 7.5.1, the soccer World Cup accounts for a considerable number of articles (18%), thus probably increasing the amount of sports coverage compared to other times. However, when looking at the topics that received the most coverage on Spiegel Online (by number of articles), the World Cup is not the only soccer-related topic: Transfers in German and international soccer leagues as well as allegations of corruption against FIFA officials (the organization behind the World Cup) also make it into the top 10 topics from June 2014 (Table 18).

Table 18: Top 10 topics on Spiegel Online in June 2014

Topic	Proportion of articles in news archive	Proportion of users in Nielsen data
Men's soccer World Cup in Brazil	17.8	30.0
ISIS-related terror in Iraq and Syria	3.2	4.0
Ukrainian crisis	2.8	4.0
Elections to the European Parliament	1.9	4.2
European debt crisis	1.5	3.0
NSA scandal	1.3	3.2
Cave rescue of injured explorer in Bavarian Alps	1.0	4.0
Refugee crisis	0.7	1.2
Soccer transfers	0.7	1.8
FIFA scandal	0.7	1.8
n	3,240	1,779

Both of these topics were absent from the list of most viewed topics in the click-stream data set (Table 10). The same is true of the refugee crisis, which in June 2014 mostly focused on African migrants crossing the Mediterranean by boat, respective maritime disasters, and the treatment of asylum-seekers by European authorities. However, these three topics account for less than one percent of articles each. The top seven topics as covered by the editorial team of Spiegel Online, however, enjoy much broader attention and also appear on the list of users' most frequently selected content items.

Interestingly, four of the most often clicked topics among the Nielsen users (section 7.5.1) were not as prominently featured as those from the top 10 list according to the news archive: The 70th anniversary of the Allied landings in Normandy on D-Day (0.6% of all articles) and the Pentecost weekend storms (0.4%) only miss the list by a few articles, while former racing driver Schumacher awakening from a

coma was far less extensively covered (0.2%). Most striking is the difference for the story about a German paramedic in Saudi Arabia (0.03%). A single article and slideshow attracted three percent of Spiegel Online users for an entire month, while many other, especially long-term topics had far higher chances of being selected due to the much larger number of pertinent articles.

In sum, the top 10 topics account for 32 percent of all articles from the Spiegel Online news archive, which is likely an inflated value due to the dominance of the soccer World Cup. Overall, the priorities set by the editorial team are quite closely reflected in actual usage, especially on the level of topics. Differences between published and actually accessed content are more pronounced on the level of sections.

8.5.2 Content structure of top 10 YouTube videos

The level of popularity of the top 10 YouTube videos varies considerably: The average number of views for all 245 videos is around 587,000, while the median is much lower with only 161,000. The latter figure seems more representative of the typical German top 10 video, as a few outliers raise the mean. The respective four videos are the only ones to receive more than 400,000 clicks: a World-Cup-themed commercial from a sports outfitter featuring international soccer stars (3.5 million views), a song from the German charts (658,000 views; incidentally the most watched video in the Nielsen sample), and two international viral videos (each with over 500,000 views at the time and more than 15 million views in April 2017).

The higher numbers of views for international videos hint toward the importance of language for success on YouTube in Germany. Eighty-nine percent of the videos have mainly German-language content, 10 percent are in English, and only one percent contain no spoken or written language. This is in line with results on the regional popularity of many YouTube videos, partly due to language (Brodersen et al., 2012), and it also seems to validate YouTube's claim of these videos being the most frequently viewed ones in Germany. But with the chosen approach, it is impossible to determine how many views came from German users specifically.

The 245 videos that made it into the German YouTube top 10 pertain to very different genres or main themes (Table 19) and are more varied than the top channels in the Nielsen sample (Table 14). More than half of the videos (52%) are about

video games. Most of these videos are let's play videos (Ackermann, 2017b), documenting a gamer's experience while playing. The focus of such videos is not on teaching others how to solve problems within a given game, but on the personal experience of the player. Commentaries are an important part of these videos, which link them to the second most frequent category of content: everyday life via vlogging (22%). Here, YouTubers typically film themselves in a private setting, like a living room or bedroom, and talk directly into the camera. Topics range from romantic relationships and friendships to work or school. Hobbies or interests like sports may also occur, but much more frequent are videos on fashion, personal style, hair, and makeup. Only the third category is composed of mainly professionally produced content, in this case music videos (7%). German-language hip hop is especially noteworthy here. Comedy and videos in list format (e.g., "7 + 1 types of driving instructors") each account for five percent of videos within the top 10,

Table 19: Genres and topics of top 10 YouTube videos in Germany, June 2014

Genre / main topic	Proportion of videos in YouTube top 10	Proportion of videos in Nielsen data*
Video games	51.6	12.5
Vlogging	22.1	6.4
Music	7.0	60.5
Comedy	4.5	7.3
YouTube series	4.5	5.6
Current events	3.7	3.6
Celebrities	2.0	1.6
Sports	1.6	0.4
Commercials	1.6	1.2
TV	1.2	0.8
n	245	248

* Relative to top 248 videos, which were each watched by 24 people or more.

current events for four. Sports and celebrities are minor topics (2% each), sports videos being partly devoted to the soccer World Cup. Apart from music videos, professionally produced content such as commercials (2%) and clips from television entertainment (1%) are marginal in the German YouTube top 10.

The analyses of popular YouTube content among the Nielsen panel in section 7.5.2 have focused on channels due to the rather small number of users per video. To facilitate a comparison between both studies, frequencies of the most popular videos from the clickstream data are reported by genre in Table 19. The sample size is about the same, with 248 videos; yet it is important to note that the least watched videos from this selection were only viewed by 24 people each. Compared to the YouTube top 10, the sample size is thus very small and likely a reason for the rather large differences in genre popularity between the two data sets. However, these include about the same number of most popular videos.

Many of the videos from the top 10 list also rank highly among the Nielsen panel members, but especially for video games, music videos, and vlogging, rather large differences are apparent (RQ14). German-language hip hop frequently makes it into the YouTube top 10, but the users in the Nielsen sample do not seem to have a taste for it. Instead, they appear to prefer pop songs and electronic music, in particular songs from the then current charts. The typical YouTube genres vlogging and, more strikingly, let's play are much more popular on YouTube overall than among the Nielsen users, at least by the platform's own account.

With regard to channels, patterns of popular content creators subsequently differ as well. Table 20 summarizes the structure of authorship of the videos from YouTube's daily top 10 list, again compared to the Nielsen data. As explained in section 8.4, in most cases the person or group operating a YouTube channel is considered the author. A few YouTubers upload videos to two channels; they are counted as one "author" here, while each musical artist who is featured within one channel of, for instance, a record label is counted as a separate author. This approach to the content creators of YouTube reveals a clear picture of concentration in the German top 10. About four out of five top 10 videos in June 2014 go back to only 16 content creators, who had at least three videos in the top 10. The other 19 percent of top 10 videos come from a broader range of channels or authors.

Only a few channels are popular among the Nielsen panel members as on the German YouTube in general, notably let's player Gronkh, vlogger iBlali (whose videos mainly focus on everyday life), comedy troupe ApeCrime, and vlogger

LeFloid (who comments on current events with a youth angle). The battles between amateur rappers hosted by JuliensBlog were even more successful among

Table 20: Structure of authorship of top 10 YouTube videos in Germany, June 2014

Channel by dominant genre	Proportion of videos in YouTube top 10	Proportion of videos in Nielsen data*
<i>Video games</i>		
ungespielt/ungefilmt	21.6	2.0
Piet Smiet	16.7	1.2
Gronkh	12.2	9.3
PewDiePie (in English)	4.5	0.4
<i>Vlogging</i>		
Dner	3.3	0.0
DieAussenseiter	2.9	0.8
inscope21	2.4	0.0
iBlali	2.0	2.0
Dagi Bee	1.6	0.8
SPACE RADIO/SPACE FROGS	1.6	0.0
Taddl/LetsTaddl	1.2	0.0
BibisBeautyPalace	1.2	0.4
<i>Music:</i> JuliensBlog (amateur hip hop contest)	2.4	4.8
<i>Comedy:</i> ApeCrime	2.9	4.0
<i>YouTube series:</i> TopZehn	1.2	3.2
<i>Current events:</i> LeFloid	3.3	3.6
<i>Other</i>	19.0	67.5
n	245	248

* Relative to top 248 videos, which were each watched by 24 people or more.

the Nielsen users than in the general YouTube charts, as were regularly published lists of, for instance, “10 hilarious facts about evolution,” by channel TopZehn. The latter also happens to be the only channel that does not prominently feature a protagonist (or vlogger, usually a young adult, often male); the usually humorous lists are presented via voice-over. Apart from Swedish let’s player PewDiePie, who uploads videos in English, all other channels contain content in German.

Channels focusing on videos games account for a little more than half of all videos in the YouTube top 10, as some of these YouTubers occasionally also upload videos on other subjects than video games. As can be seen, only four content creators are behind this big block of successful German YouTube videos, the first three alone being responsible for 22, 17, and 12 percent of the top 10 videos from June 2014, respectively. This rate of success is unparalleled in any other content category. Eight authors who mainly upload vlogs about everyday life feature in the top 10 regularly, one of whom predominantly focuses on beauty and fashion. Four other genres are only represented via one channel each: music, comedy, YouTube series (mainly top 10 lists), and vlogs on current events.

Finally, it is noteworthy that no traditional media company, like a record label, television channel, or film distributor, managed to bring three or more videos to the top 10 in June 2014. This is a very different picture than among the Nielsen users, where especially professional music channels were much more successful (Table 14).

8.6 Summary and discussion

The analyses of content structures on Spiegel Online and YouTube reveal different pictures, which are partly due to the structures of the sites themselves, but also depend, of course, on the chosen methods of analysis. The results for the Spiegel Online archive reveal that the site continues to cover a wide range of topics, from a variety of both hard- and soft-news categories. The most important events by amount of coverage closely resemble the respective list from the clickstream analysis (section 7.5.1). But when looking at the broader sections of the website, the users’ apparent interest in the miscellaneous and sports categories, as expressed in their selection behavior, is even more pronounced than the salience of these types of content in terms of published articles reflects.

It thus appears that the news site can, to some degree, steer attention to certain topics by the number of articles they dedicate to an event, and/or that over time, the editorial team has learned what the users most frequently select and manages to accommodate these choices quite closely. While the presented snapshot from June 2014 does not provide proof for this assumption, it seems that the site's structure and users' behavior are interdependent, as expected (see section 8.3). With the strong focus on soft news, Range and Schweins's (2007) characterization of Spiegel Online as a "smart tabloid" also still appears to be a fitting description for the articles published in the summer of 2014: There are a considerable number of stories on national and international politics, the economy, and other hard topics. But these are complemented by an equally impressive number of sports and miscellaneous articles (and the users' appetite for the latter is even bigger). These findings on content structures are thus in line with the existing research on Spiegel Online. In sum, content structure and user choices appear to be relatively closely aligned on the news site.

Just like other news media, Spiegel Online can therefore influence what topics are more frequently selected, which can be assumed to also feed into awareness about such topics. That central news sources are important agenda setters, is of course not new (McCombs & Reynolds, 2009). But the comparison between available articles and usage presented here shows how the more prominent topics are also more frequently accessed. This contributes to tracing the integrative effects that (news) media can have: Their decisions about what topics to cover how prominently and extensively influence what their users select—even though many more topics are available as well, in particular on news websites. The most interesting finding in this regard is a comparison between the three analyses presented thus far. News items were found to enjoy the overall highest level of content awareness (see section 6.2), although on a news site like Spiegel Online, only a small fraction of the usership reads articles about hard news (see section 7.5.1). However, their prominence on the homepage (which about one in five users from the Nielsen panel accessed; see section 7.5.1) likely contributes to awareness about the most salient topics, even if most of these users do not choose to read more about them on the site. Of course, many other sources for news on current events are also available, and people may learn about the topics of the day through conversations or online social sharing as well. Future studies into news awareness and the integrative potential of news (and news sources) should

explore the respective relationships between news offerings, news use, and interpersonal communication further.

Evidently, via the approach chosen for this study it is not possible to check whether the news archive contains all content items published in June 2014 or, if not, whether there is a systematic bias regarding potentially missing articles. The archive also does not display articles, videos, and slideshows on a given event separately, while they can be announced individually on the homepage and were also counted separately in the analysis of Nielsen clickstream data. The structure of the news offering of Spiegel Online presented here is thus just one way of capturing it, but as stated above, it appears plausible both with regard to previous research as well as the analysis of the most frequently read articles presented in Chapter 7.

The problem of how to represent content structures of popular and diverse websites is even more pronounced for YouTube. The study has focused on the most successful YouTube videos in Germany in June 2014, which differ clearly from content patterns on, for instance, German television (Krüger, 2014). While YouTube as a platform is the second most popular website in Germany,²² its most frequently watched videos fall into a number of unique categories, particularly video games and vlogging. Both of these genres are successful on YouTube in other languages as well (Ackermann, 2017a; Molyneaux, O'Donnell, Gibson, & Singer, 2008), but neither of them would be considered middle-of-the-road content typical of German mass media.

Only a small number of YouTubers dominate the top 10 list, which could be due to a Matthew effect: Once a YouTuber has found a certain level of success, they seem to be attracting more success. This is encouraged by the platform design where users can subscribe to a channel and will subsequently be notified about new videos from channels they like. Thus, success begets more success, and this also drives YouTube commercially: Users who upload videos that receive a certain amount of views are invited by the platform provider to become “YouTube partners” and receive a share of the advertising revenue created through their videos (Gillespie, 2010). The program thus incentivizes content creators to build and maintain high subscription rates and to upload a steady stream of vid-

22 According to <http://www.alexa.com/topsites/countries/DE> (11 April, 2017).

eos to be admitted to or remain in the partner program (Shields, 2009). The platform also entertains a training program for aspiring vloggers (Moorstedt, 2016), thus strengthening the current structures of YouTube success.

As stated in section 8.5.2, it is impossible to infer the national origin of video views or the number of repeated views by the same users from the mere list of top 10 videos (and only some of the videos in this data set also figure prominently in the Nielsen data). But the predominance of German-language content supports YouTube's claim of these being the most popular videos in Germany. In contrast to the Nielsen panel, the two most successful genres in the country overall thus appear to be video games and vlogging. Given the central role of the protagonists within the videos in these two genres, it seems safe to assume that their personality or other individual traits also play an important part in creating audience appeal. This could be an additional explanation for the low levels of overlap in the analysis of YouTube usage data (section 7.5.2). In addition to liking a YouTuber, interest in particular content areas appears to be important: Between watching somebody play a video game, apply makeup, or make jokes about the everyday life of young adults, there need not be a large common denominator—when at the same time, there are many more channels on YouTube that offer more of each of these as well as many other genres.

The analysis of popularity on YouTube via its top 10 list only partly validates the findings from the Nielsen sample (and vice versa). But in this regard, it has already been stated above that of the 8,147 users in the Nielsen panel, only a very few watched the same videos. The list of popular videos thus strongly depends on the makeup of the panel. In the current chapter, a comparable number of popular videos was held against the entries from the platform's own top 10 list. Yet the top 248 videos only represent 0.1 percent of the videos in the Nielsen data set. And the least popular of these were watched by only 24 people, which equals 0.3 percent of the users. The individual tastes and interests of such a small number of users can influence the ranking of videos considerably. This may be especially apparent for music videos and video games: If the Nielsen panelists like pop music more than hip hop, this will favor the former genre. The same would be true with regard to a lack of gamers in the Nielsen panel. But in addition, successful video-game-themed channels like those of Gronkh and PietSmiet publish a large number of videos over a short period of time, often more than one a day. With so many videos, overlap between top lists on the platform in general and among a sample of users may be

hard to achieve. In fact, success corresponds most between the two data sets with regard to vloggers. These follow a different strategy than the let's players: Some also have a lot of subscribers, just as the gamers, and regularly make it into the top 10, but they publish far fewer videos. By mere chance, the probability of observing overlap between the Nielsen data and the YouTube top 10 list is thus simply larger for videos from vloggers than those produced by gamers.

With regard to the integrative potential of YouTube, it seems to lie mostly in the platform's ability to cater to niches of people who share a common interest. Usage is scattered over so many videos that even the top 10 list contains many things that only people with specific interests may want to watch. Of course, there are YouTube trends and viral phenomena that occasionally reach high levels of awareness. Yet the most successful videos from June 2014 or those included in the survey presented in Chapter 6 can hardly be expected to gather a large audience and thus unfold integrative potential on a larger scale. Under certain conditions, popular YouTube content may spill over into other media (Sayre, Bode, Shah, Wilcox, & Shah, 2010) and thus receive more widespread attention. But even viral videos probably need this reinforcement through other channels to achieve broader awareness and thus unfold integrative potential within the larger population. The underlying mechanisms of such inter-agenda setting between traditional media, online platforms, and respective user behavior also should be explored by future studies.

This is also true for the observed differences between the Nielsen data and the YouTube top 10, which could be due not only to the types of videos most frequently posted, but also to another factor: Studies have shown that users with a YouTube account tend to be the same age as the content creators whose videos they watch (Xiao et al., 2012). If YouTube is especially popular among young users, these may be underrepresented in the Nielsen panel to truly capture the variety of choices these young users make on the platform. In this regard, the fact that Nielsen does not record usage on mobile devices may aggravate the problem, since smartphones are an increasingly popular way of going online, especially among youth (Feierabend et al., 2014; Müller, 2013; van Eimeren, 2013). Lastly, as stated above, it is unclear how the YouTube algorithm determines popularity for its top 10 list. It could be that the successful YouTubers, who can all be assumed to collaborate with the platform and make a comfortable living from their online videos (Cheng et al., 2014) but also generate advertising revenue for YouTube, are

given more visibility to further boost their popularity. In any case, there is no way for outsiders to ascertain how the top 10 list is generated (Gillespie, 2012).

Overall, the structure of the content offering appears to influence or steer usage more clearly on Spiegel Online than on YouTube, which again would ascribe more integrative potential to the news site than the video platform. Of course, the number of articles published on a given day is much smaller than the amount of new videos uploaded each day. The editorial team of Spiegel Online organizes them via categories—and probably also ranks them by assumed importance. Most of the top news stories from the Nielsen data also enjoyed a high level of visibility, through many published articles. All this probably contributes to the parallels between what users frequently selected and what the news site offered. On YouTube, on the other hand, displaying videos as “popular right now” or as part of a daily top 10 may not have the same importance for users in deciding what to watch (the recommendation feature may be much more important in driving usage; Zhou et al., 2010). YouTube usage thus appears much more random than the use of articles on Spiegel Online, compared to what is (supposedly) popular on the video platform overall. Even two viral videos that were watched by many people worldwide in June 2014 did not make it into the selection of videos watched by the members of the Nielsen panel.²³

A small sample size is thus a problem for the study of content and usage on large websites such as YouTube. This concerns the Nielsen sample, but also the list of most watched videos. When online-video usage is to a large part driven by taste, interest, or also interpersonal contacts in social network sites (see section 6.2), it is difficult to establish the influence of media structures on usage. However, instead of looking at select niches in detail (see section 8.2), future studies on YouTube content should continue to look for ways to grasp the platform’s content more broadly to complement case studies on specific genres.

The analysis of the most popular content of YouTube, that which by default has the highest potential to attract a large audience, shows that between video games and vlogs, it is no wonder that hardly any overlap was observed between YouTube audiences in section 7.5.2. It may be that some YouTube content creators become

23 Unfortunately, 10000 Flies does not monitor the popularity of YouTube videos in social network sites, so it cannot be checked in retrospect if these two videos were shared, liked, or retweeted a lot at the time.

stars for young users, while their parents have never heard of them, a phenomenon occasionally described in the popular press (e.g., Ault, 2015; Ungerer, 2015). But a broad audience for the same online videos seems highly unlikely with the current structures of popularity for online audiovisual entertainment.

Of course both Spiegel Online and YouTube have existed long enough to reflect what their users like in their own content and/or design. It can also be expected that the platforms' owners have adapted their offering and technical features of their respective site accordingly. Neither of them may actively try to create integrative effects by bringing together a large audience. If their interests as media businesses depend more on allowing users highly individualized choices about what content to select, they can hardly be blamed for that. However, if not highly popular websites like these, which online outlets can then be expected to unfold an integrative potential on a broader basis? What the content and click-stream analyses have shown is that news presented as relevant through prominent and extensive coverage does attract at least parts of the usership on Spiegel Online, while others may prefer their personal selection of soft news. YouTube's lists of popular videos may also increase the number of views for featured clips. But their style or topical content may not persuade many users with very different interests to watch them. Types of content as well as ways in which content items are presented on a given platform thus appear to be important structures of media offerings that influence user behavior. However, the structures do not predetermine what users do as they of course retain agency about what to click on in online environments.

In trying to assess the role of online platforms for social integration, this interdependence of usage and content offering means that their integrative potential lies not only in what people use, but also depends on what they *could* use given the content structures. If large groups of users gather around specific content, integrative potential can be realized. But if, from a normative perspective, a lot of high-quality hard news items, for instance, are available but hardly used, integrative potential may also remain unfulfilled. Analysis of both usage behavior as well as of content thus contributes to answering questions about the integrative potential of online platforms—and ultimately of the Internet in general.

9 Conclusion

Media are generally ascribed integrative functions for society, yet the empirical knowledge about them is scattered across many fields, and many questions have remained open to this day. The aim of the current study was to investigate the integrative potential of the Internet, its content, and uses. The technical structures of online platforms, the content on offer, and the ways in which users access it all determine how much integrative potential these platforms can realize. As outlined in section 2.4, media are ascribed integrative potential because they can bring large groups of people into contact with content that can influence, among others, their knowledge about the world, their opinions, or also their everyday conversations with others. Compared with mass media, the Internet is often seen in a negative light in this regard, as scholars and commentators fear a loss of integration in the online era (Chapter 3). In addition to examining content, patterns of usage, and user characteristics for online platforms, the study therefore also considered mass media. These results form a baseline against which online offerings can be compared.

A number of open questions about media, the Internet in particular, and social integration have been summarized in section 5.1. In addition to comparing the integrative potential of different media, these questions also focus on the role that users' media repertoires play since most people access a variety of outlets, with larger and smaller audiences. In this regard, the Internet may be particularly well designed for offering niche content, but it also allows more choice, and distribution of content in online environments may become a relevant factor in assessing the integrative potential of the Internet.

What has also been neglected in the previous research on integration and media is a comparison across different types of content. Information and entertainment, on the one hand, may play different roles in providing people with a shared agenda, and a shared canvas of social reality on the other. How both types of content fare with regard to content awareness among media users as well as patterns of usage on online platforms is not often studied. Likewise, studies on integrative media functions may neglect usage or content structures of media, which are, however, interdependent (Webster, 2011). The current study

has subsequently related content and usage to different measures of how well individuals are socially integrated and how far awareness of different types of media content spreads. Ultimately, integrative media effects on the level of individuals forms the prerequisite for media to advance the integration of society in general.

To contribute to answering these open questions, different perspectives have been combined: The study is based in the tradition of audience research, and follows the logic from this field especially with the survey analyzed in Chapter 6. This has been complemented by an analysis of clickstream data to study online use in more detail (Chapter 7) and content analyses of what is offered or promoted on two popular websites versus what is frequently selected by the users (Chapter 8). The current chapter summarizes findings for the integrative potential of the Internet, comparing it to mass media, before addressing limitations of the present study. Lastly, an outlook on still open questions is given, based on the findings of the conducted analyses.

9.1 The integrative potential of the Internet versus mass media

As described at the outset of this study, basic integrative functions are regularly ascribed to media (Vlašić, 2004). On the micro level, media give people something to talk about with others, which forms the basis for shared perceptions of reality, the emergence of a public sphere to discuss societal issues, and lastly the bringing together of societies that are enabled, through media, to perceive themselves (see Chapter 2). If the Internet is different from mass media, or is even harmful for societies in the online era (as for example Sunstein, 2007, and Pariser, 2011, suggest with their accounts of echo chambers and filter bubbles, respectively), this should be reflected in how people use them and how that use is reflected in, for instance, awareness of media content. As discussed above (see sections 2.4 and 4.4), content awareness is seen here as a necessary condition for more elaborate integrative media effects such as those mentioned at the beginning of this paragraph. Findings for awareness of different types of content from different sources are discussed in section 9.1.1, while the current section focuses on the relationships between the Internet and social integration on the micro level of the individual.

Relationships between media and social integration are expressed in, for instance, differences in media use or content awareness between well and less-well integrated people. As in previous studies, these were also apparent in the analyses of survey data presented in section 6.2. To capture individuals' integrative status, scales for two dimensions of social capital were used, namely bridging and bonding social capital. These refer to the resources people enjoy through their loose and close ties. While this is only one way of gauging social integration on the level of the individual, it is entirely independent of media, their use, or content, so that correlations with these constructs can be analyzed.

In the presented analyses, especially bridging social capital proved to be related to content awareness as well as media use. Use of the Internet showed a slightly lower level of association to bridging social capital than use of mass media, but use of social network sites was more strongly related to it. Frequent use of such sites also went along with an increase in awareness for online content—which is typically shared through such sites. As has been documented since the earliest studies into why people use media (Berelson, 1949/1970; Herzog, 1944), this activity appears to have social benefits. To appear well informed in other people's eyes or to be able to talk about current topics in everyday conversations may be key in this regard, which would explain why especially bridging social capital seems to be linked to media use and content awareness. It would also be in line with findings on social network sites, which have been shown to be helpful for building and maintaining bridging social capital (Domahidi, 2016; Ellison et al., 2007). This is likely not only due to sharing and communicating about media content, since such platforms can be used for many other kinds of communication and interaction as well. But media content is an important part of social network site use, and just as Berelson showed for newspapers in the 1940s, how one uses media and what topics one subsequently knows about may feed into an SNS user's social prestige.

Speaking of newspapers, it is, however, noteworthy that news awareness was lower for frequent use of social network sites, while frequency of using the Internet overall was unrelated to this indicator. This leads to two conclusions: The Internet in general is not detrimental for bridging or bonding social capital or content awareness. Relationships with such constructs may, however, differ for different kinds of online platforms. But given these findings on the Internet and social network sites, the question still remains of how relationships between

these forms of online use and integrative status of the users, as well as content awareness, compare to the established mass media.

From a certain point of view, one can argue that newspapers actually have a clearly higher integrative potential than the Internet—and maybe even the highest among the media studied here. Even after controlling for political interest, use of other media, and other variables, newspaper use is most strongly related to news awareness, and still comparatively strongly to awareness of TV entertainment. In addition, news about current events reached the highest level of awareness overall, so the contribution of the printed press to a shared view of reality is especially valuable. Similar effects could be unfolding for news on the radio or printed news magazines, but the use and content offering of these media would have to be studied in much more detail than in the analyses presented in Chapter 6.

From a normative perspective, broadly shared awareness about current events is highly desirable as it allows the formation of a public sphere (section 2.1.3). In this regard, the findings on newspaper use and content awareness are even more surprising, as most people in Germany read a local or regional paper (Hasebrink & Schmidt, 2013). The reach for each title is subsequently comparatively low, but their usually strong focus on politics and current events means that readers can expect to be connected to the current agenda, which many other people will share. Through this and in spite of their steeply declining readership over the last few decades (Röper, 2016), (printed) newspapers may still realize considerable integrative potential. The findings on newspapers also underline that as stated in section 2.1.1, a large reach is helpful for media to have integrative effects, but not a necessary condition. When its topics align with those of other media, a smaller reach can apparently be compensated for a medium like the printed press to unfold integrative potential.

Through news, but with generally larger audiences than typical German newspapers, television also contributes to social integration, as frequency of watching is likewise related to news awareness. In addition, spending a lot of time in front of the small screen is, expectedly, also associated with a higher awareness of recent entertaining television programs. Yet it appears that only media events such as international soccer tournaments can bring together truly large audiences and make them part of widely shared experiences. Otherwise, the television audience may be too scattered across numerous channels and programs to lead to much overlap. But maybe there is something else to be had from being

part of a large audience: Audience shares and the popularity of public screenings of soccer tournaments have been on the rise in recent years (Gerhard & Zubayr, 2014; Gscheidle & Kessler, 2012), so watching a game with many others at the same time appears to become more and more attractive (while, of course, the successes of the German team in recent tournaments also help). With a diverse offering of TV channels, there are not many other occasions for such an experience, especially when compared with former times of only one or two channels. So maybe an additional gratification from watching a (hopefully) good game is the feeling of being part of a large audience that gathers around television sets or larger screens as the last of the “virtual fireplaces.”

News items are of course also offered online on many different sites and are frequently shared as well. Likewise, soccer games or other media events can be streamed via the Internet in the same way as these are broadcast via television. For other types of content, however, the Internet may have less integrative potential than newspapers or television. And the technical features of online platforms may make it less likely for large audiences to gather online. As has been shown in Chapter 7, even on a popular news site users may be mostly dispersed, and many of them may not even come into contact with hard news there since they do not access respective articles or even the homepage. High-choice platforms for audiovisual content, such as YouTube, appear to lead to an even more fragmented use. Currently, however, most people continue to use traditional media (Koch & Liebholz, 2014), so that a highly customized Internet use can probably be compensated by other media. Future studies could thus investigate content awareness and social integration of Internet users who do not turn to mass media as well.

A problem also left for further research concerns alternative indicators for social integration that cover the macro level, beyond interpersonal contacts as scales for social capital do. As remarked in section 6.1, the questionnaire used for the presented survey included items on the respondents’ attachment to or identification with different levels of community (which were adapted from the bi-annual ALLBUS survey; GESIS – Leibniz-Institut für Sozialwissenschaften, 2015). Due to the very low variance in the answers to the respective questions, these indicators did not prove helpful in the current study. Its implications therefore are restricted to the micro level, and how to measure integration on the societal level as well as its relationships to media remains a task for researchers in the years to come.

Yet it appears from this first summary of findings that things do not look entirely bleak for the Internet. Its use appears to be helpful for social contacts and to at least contribute to content awareness. A closer analysis of different types of content as well as patterns of online usage will help to further complete the picture of the integrative potential of the Internet.

9.1.1 *Online versus other content*

Differences between the awareness of different kinds of media content have already been mentioned in the previous section. News about current events, television entertainment, live sports coverage, short YouTube clips, and humorous viral online content have different features, are typically used in different ways, and can be assumed to fulfill different functions for their users. From front-page news items, which were used to assess news awareness, the audience can generally expect a high level of currentness and societal or political relevance. These features automatically give respective articles a certain level of importance. Even if their specific content may not personally interest every reader, most people would probably agree that it has at least some significance for society. This can be very different for entertainment television, however.

In a multichannel environment, most television channels are targeted at specific groups, by combinations of age, gender, income, and interests such as sports, business, or culture. Subsequently, many programs are not expected to draw in all television viewers present in front of the screen during the respective airtime. Yet regardless of such economic considerations, television programs can all transport metessages about social reality, showing their audience what is considered valuable in their society (see section 2.1.2). These may also be present in other media messages, including news, and contribute to the socialization of media users in a given society. Some programs may be more explicit about such metessages, while they have more of a background character in others. Overall, one can expect television to conform to mainstream values and be even a little conservative in adapting to social change (Bruns, 1996; Mahrt, 2010). The findings on the lower awareness of television entertainment than of news may be a reflection of the more specific entertainment interests of different viewers. But television can still be considered to have a higher integrative potential than the Internet, due to its relatively conventional content.

Online, much lower hurdles exist than on television for making content accessible that goes beyond mainstream expectations and conventions. Anderson (2006) focuses on the positive aspects of the resulting possibilities. Economically, the Internet has advantages for content creators because niche media can be made available that would not be viable for traditional ways of mass-media distribution. Furthermore, the audience does not have to make do with content that is appropriate for mass media, which may, necessarily, have a tendency toward the middle of the road. Third, groups and activities that are not part of the mainstream can be represented online while television may continue to ignore them (see section 8.2). But the resulting niche content has less integrative and more fragmentizing potential, of course.

In this regard, the findings on YouTube from the current study are particularly interesting. In the Nielsen panel, music from the charts proved to be especially popular, which also airs on many radio stations, for instance (see sections 7.5.2). These songs were probably not only listened to on YouTube, so the platform would merely add to the integrative potential that the songs enjoy from other platforms. The respective videos were less successful on YouTube in general, however, based on the platform's daily top 10 (see section 8.5.2). Instead, niche content, especially let's play videos from gamers, proved to be a dominant genre in Germany, next to vloggers, some of whom were also popular among the Nielsen panelists. The form of these videos is usually different from television, and unique styles have developed on YouTube, which as a platform also has other affordances than television, of course. That these videos do not find as large an audience as television programs may hardly be surprising, both in terms of their technical distribution, but also due to their topical content. This likewise explains the low level of content awareness for popular current YouTube videos in the survey (see section 6.2.1). The video platform thus appears to realize much less integrative potential than the mainstream-oriented mass media. Similar findings can be expected for other platforms that offer mainly niche content. In the survey, however, some of the other online content items reached markedly higher levels of awareness, but were still less frequently remembered than typical television programs.

Low levels of awareness do not mean that the respective content items as such do not possess integrative potential at all. But in an online environment, it is more difficult to realize this potential because the content may struggle to find a broader audience. The same appears to be true of the top hard news of the time, which had

a relatively high presence on Spiegel Online (see section 8.5.1), but were only accessed by less than five percent of the users in the Nielsen panel (see section 7.5.1). News sites can offer highly relevant stories, and other types of online content such as YouTube clips can still, of course, contain metamessages, which could contribute to making social reality visible to the users. The two popular videos about everyday sexism and anti-Nazi activism from the survey express messages about the values of equality and tolerance (see section 6.2.2). Two other popular items from the time include a list of pictures about parents who try to master a new technology and a video of elderly women smoking weed for the first time. That parents find smartphones unusual or have difficulties operating them, and that grandmothers usually do not consume marijuana (at least not publicly) are messages that are in line with the usual expectations about these demographics. Similar things can be said about the young vlogger who is shown choosing and commenting on fashionable clothes and accessories for her boyfriend. Her video affirms messages about consumer culture as well as conventional gender roles. In fact, as with age in the two popular content items on middle-aged and older people from the survey, a certain uniformity can be observed among the top YouTubers in Germany with regard to gender, which may have cultivation effects on their often young audience (stereotypical gender roles by German YouTube stars and their effects as role models for adolescent viewers are discussed by Bock & Mahrt, 2017). This also makes seemingly innocuous, but highly popular videos on fashion, beauty, or makeup relevant to the study of socially integrative media effects. Many more content items exist on YouTube and on the Internet in general; but only a small number make it to the top and are perceived by a larger audience.

In summary, at least some mainstream appeal seems to be mandatory for widespread awareness of online content and thus the fulfillment of integrative potential. If the content item itself is not similar or identical to mass media content (like songs from the charts) or if the topic is non-mainstream (like a let's play video), the roles enacted by the protagonists may still speak to a wide audience, for instance. It is important to note, however, that mainstream appeal can also lie in the (negative) reactions that may go along with a widely shared, but at first glance not mainstream-appropriate online content. In her analyses of YouTube memes, Shifman (2012) describes that the depiction of "flawed males" can motivate success for online videos (see section 3.2). The latter may be shared because viewers can connect through feelings of superiority via gloating comments or malicious imi-

tations of the depicted persons and their (perceived) failings. A similar audience reaction may lie behind the success of the two content items featuring parents and seniors that were popular at the time of the survey.

Of course, the term “online content” can refer to many different things. In the current study, widely shared videos and other viral content were compared to news and television entertainment (both of which can also be accessed online). This allowed showing that even successful online content usually does not reach widespread awareness in a representative sample, and a look at the content structures on YouTube suggests that this may be due to the fact that even the largest niches still remain exactly that: niches. A platform like YouTube may attract many users, but most of them will disperse to such a degree that hardly any widely integrative effects, beyond single niches, can be expected. However, as already hinted at above, this also has to do with how people access online content, which is why the role of patterns of usage for the integrative potential of the Internet is discussed in the next section.

9.1.2 Patterns of online usage

As described in sections 2.1.1 and 3.3, the size of an audience matters for the integrative potential that can be ascribed to a medium. The formation of audiences around a specific outlet is therefore an important component of the study of media and integration. Apart from the different economic imperatives of online platforms mentioned above, usage differs between the Internet and traditional mass media in two important ways. First, online use leaves traces and thus can be studied with different approaches than mass media use, due to the necessary interaction of users with an electronic platform of which logs can be kept. The alternative approach of using clickstream data in the current study is similar to tracking television viewing via people meters. Analyses of use of individual content items thus becomes possible, and the respective results presented in Chapter 7 have illustrated how diverse the viewing behavior of people using YouTube or Spiegel Online can be. Of course, with other media users can also select only specific items, such as newspaper articles, or mix and match content from different linear television programs via channel switching, for example. But single articles and videos come with a unique URL in the data set, so that individually accessed

content items can be identified much more easily with clickstream data than with people meter data, for instance. For YouTube, the collection of information on the accessed videos can even be automated, which is particularly helpful in light of the high number of accessed videos on this platform.

The second difference concerns a level of personalization that exists on online platforms, but not for mass media. Users can customize the content offering on many sites in the mid or long term, by selecting preferred content categories, subscribing to certain offers, and by connecting with other users who may post unbundled content items of a more or less wide variety, for instance on social network sites. So the individual setting of a platform by each user influences what content they are shown—before they make decisions about which items to actually look at more closely. To account for such differences, online usage has been studied via two methods: a survey and the already mentioned clickstream data.

In both cases, the variety of content options is clearly reflected in patterns of usage. Cluster analysis of online use has shown that a range of repertoires for online information and entertainment purposes exists and can be combined. Some users rely heavily on online sources, while others seek out only select platforms for a smaller range of purposes (see section 6.3.2). These patterns resulted in different levels of content awareness. Users with a more varied online repertoire were generally found to be aware of more content from all three investigated types. This finding is hardly surprising, but underlines the validity of content awareness as an indicator of integrative media effects.

In the regression analyses of the survey data, online repertoires have not been considered, but the influence of contact networks was investigated for Facebook users. It turned out that the larger size of a user's network went along with an increase in awareness of online content, but a decrease in news awareness (see section 6.2.2). These heterogeneous findings unfortunately do not help to clear up the mixed evidence from previous research (see section 3.3). Some scholars had found a greater diversity of networks on social network sites compared to face-to-face interaction (Goel et al., 2010; Hampton et al., 2009), which could lead to more diverse content visible to users of these platforms. And the social context of news had been shown to make people click on news items that were not in line with their political orientation (Messing & Westwood, 2014). On the other hand, users had turned out to be more selective with regard to political content matching their own opinion than customization algorithms (Bakshy et al., 2015). Further research is needed

to identify the processes at work that lead to such inconclusive results. But given the differences in information and entertainment repertoires (section 6.3), it is possible that selection works differently for light-hearted content (under which category most of the items used to assess awareness of online content fall) than for political content or (hard) news. A larger network of contacts may increase the number of items a user is shown on a social network profile. But the decision which ones to click on may turn out differently for different kinds of content. However, the news items selected to measure news awareness in the survey do not refer to clearly polarizing issues in German politics, so that in this specific case, the different findings for awareness of news and online content among users with a large network on Facebook cannot be explained by this interpretation.

The study of repertoires and network size shows that long-term decisions play a role in online usage. The clickstream data instead allow an analysis of more short-term selection behavior on the current content available on Spiegel Online and YouTube. Most videos on the latter platform have only been watched by one panel member, while also only a small selection of topics drew a larger audience on the news site. The resulting low overlap between users of different news topics and video channels, respectively, shows that below the platform-level, not much integrative potential is realized. More may be created on Spiegel Online, where the top news stories reach at least a core of interested users. But for YouTube, individual interest appears to drive usage to a large extent, and given the vast amount of every conceivable type of content available on the platform, this results in highly scattered usage. The findings from the current study thus do not support Webster and Ksiazek's (2012) all-clear regarding a "massively overlapping culture" online instead of fragmentation. Apparently, the more fine-grained the study of online usage becomes, the more sobering the evidence for the integrative potential of the Internet and different types of online platforms turns out to be.

9.1.3 *Summary: The dependence of integrative potentials on structures and user behavior*

Although the Internet can display any type of media content that traditional mass media can, it is generally not assumed that it would be equally helpful for bringing together members of a society. Instead, negative scenarios about

online or digital fragmentation by far outweigh accounts of possible integrative benefits. New media can of course incite all kinds of more or less irrational fears (Butsch, 2011; Keuneke, 2011), and fragmentation is by no means the only concern expressed about the Internet (e.g., Johnson, 1996; Noam, 2005). In light of the segmenting metaphors describing digital fragmentation (Chapter 3), Webster (2014) somewhat stoically states that “first, most writers want to tell a memorable story” (p. 2), and a story with a clear culprit is of course easier to tell and to remember. The present study has striven not to fall into this trap by instead investigating the integrative potential of the Internet from different angles, including self-reports about media use, actual online use behavior, and structures of online content. Perhaps expectably, this has not resulted in one clear metaphor or catch phrase about online integration—but hopefully a more subtle and complete picture.

Taking together the findings summarized in the previous sections, a considerable potential for fragmentation, rather than integration, exists on the Internet. Integrative effects are not impossible, for instance through online news sites that bring people into contact with the current agenda. Viral content with clear metamessages can also be assumed to realize at least some integrative potential. But it appears that the mass media are much better at helping to integrate people (and presumably societies).

This overall skeptical or negative finding results from the more detailed consideration of content structures and usage patterns. It was shown how diversity of content offerings goes along with a dispersion of the usership into mostly niches. On the news site Spiegel Online, these were primarily soft-news niches, with the exception of the soccer World Cup, which drew a large part of the users. On YouTube, almost nine out of ten videos in the Nielsen sample were only watched by one person each (see section 7.5.2), while the site’s top 10 were only partly reflected in what the users accessed (see section 8.5.2). The studied platforms thus appear more prone to fragmentation rather than integration.

The consideration of both usage and content also underlines the usefulness of the concept of integrative *potential*. Whether or not the Internet has integrative or fragmentizing effects on society is not only a question of what content is available online. Even the most valuable, potentially highly integrating content still needs—and may struggle—to find an audience. This also means that a medium like the Internet can be deficient on both counts. With a content analysis of only

two highly popular sites, the integrative potential of the Internet in general can of course not be assessed. But the results for these two sites make clear that the relationships between content and usage should be studied further to better understand the role of the Internet for social integration—instead of just one aspect. Studies using tracking data of online usage and different types of classifications of the accessed content are a promising avenue in this regard. So far, such studies have been conducted by researchers with access to a site's logs (e.g., Bakshy et al., 2015). But researchers at different universities across the world are currently working on methods of data collection that can also be applied by third parties. Their work will hopefully advance knowledge in this area in the future and validate findings from proprietary research.

Different types of content and their integrative potential have been discussed in section 9.1.1. The respective findings could mean that media structures (including, but not limited to, content) and user behavior may be linked in different ways. One of the main theories used to derive assumptions about a lack of integrative effects of the Internet is selective exposure (Freedman & Sears, 1965; Sears & Freedman, 1967), based on the users' assumed tendency to avoid cognitive dissonance (Festinger, 1957). This theory is mainly concerned with information and its congruence with a person's worldview. But respective effects in user preference for consonant content have also been found for entertainment (Weaver, 2011). However, maybe the "cost" of exposing oneself to dissonant content is higher for information (and their potentially challenging political leaning) than for entertainment whose metamessages may go against a user's worldview or opinions about acceptable behavior. This could mean that entertaining content may have the potential to reach a larger audience even with controversial metamessages, while news, especially on polarizing topics, may be more likely to induce avoidance behavior among users. However, with regard to the creation of a shared public sphere, more selective online behavior in news consumption may be problematic when online use replaces news consumption via traditional channels like newspapers or television. The documented weaker relationships between Internet use and content awareness (see section 6.2) may be a result of this. But these assumptions will have to be verified by future research.

The same is true for the effect of exclusively online repertoires. Currently, most German users rely heavily on traditional media, while some groups also have diverse online repertoires. The respective findings presented in Chapter 6

are in line with previous research (e.g., Hasebrink & Schmidt, 2013; Koch & Liebholz, 2014), but usage patterns can also change, for instance with the rising popularity of video-on-demand services like Netflix and Amazon Prime (Egger & van Eimeren, 2016). These offer typical television content, mostly of an entertaining nature, which as such can have the same integrative potential as on television. However, such platforms offer a broader range of unbundled content that can be accessed independently from time constraints. And the platforms employ customization algorithms that record users' preferences to offer them more of the same (Pariser, 2011). Whether repertoires in which television has been largely replaced with video-on-demand services will result in different integrative effects, for instance with regard to content awareness, will have to be seen. But it seems advisable for future research to consider both content and patterns of usage, as both are relevant for the integrative potential of a medium. Before proposing an outlook for future work on integration and media, the limitations of the methods applied in the current study are discussed.

9.2 Limitations

The previous chapters and sections have argued for the application of different methods in the study of the integrative potential of media, with three methods employed in the present study itself. But of course, these also have their limitations, both individually and in combination, which need to be taken into account when assessing the significance of the presented findings.

Especially for the clickstream data and the content analysis, the limited range of the data sets comes to mind. The daily top 10 videos on YouTube are only the very tip of the most popular videos on the platform. Likewise, a month is a rather short time frame, which can be heavily influenced by the events of the time, although the presented results closely resemble broader analyses of popular German YouTube content (Goldmedia, n.d.; Mahrt, 2017b; webvideo.com, 2013). More importantly, however, Spiegel Online and YouTube are only two, albeit popular, outlets. Even if they are among the most successful platforms of their respective genre, structures and usage could look very different for their competitors, and future studies will hopefully test the significance and replicability of the findings presented here.

But while the analyses of clickstream data and online content had been designed as exemplary and illustrative from the outset, the survey was intended to capture a wider slice of reality and thus be more representative. However, already the decision for an online survey came with some shortcomings. In contrast to versions for phone interviews, online questionnaires allow the inclusion of pictures, which were helpful in asking people for their recognition of television and online content. Paper-and-pencil questionnaires could have been an alternative in this regard, but would only have been feasible with a much smaller sample. In the future, such a variant seems advisable to assess the generalizability of the findings and conclusions presented here, especially with regard to one important limitation of the chosen design: An online panel, while allowing to control for variety in the sample via quotas, does not contain people who truly never use the Internet. The online repertoires of the sample studied here do vary to a considerable degree, with the Internet being more or less central for information and entertainment across user types (see section 6.3). But it is impossible with the gathered data to compare the findings with people who do not use online sources at all for these or other purposes. In contrast to face-to-face interviews, online surveys additionally also need to be shorter to avoid high dropout rates. This has limited the number of media use variables that could be included, which are often much more extensive in other studies, especially in consumer research. For online entertainment use, platforms for streaming videos on demand have not been included, as in 2014 only four percent of Internet users in Germany used such services at least once a week (Puffer, 2015). The introduction of Amazon Prime and Netflix the same year have led to an increase in usage, however (Egger & van Eimeren, 2016), and future studies should include these types of platforms. In any case, the results for online repertoires and regressions of content awareness on media use could be much more detailed with a more extensive questionnaire.

Speaking of content awareness, the exemplary nature of the content selection included in the survey has already been discussed in section 6.2.2. But with regard to the overall findings of the current study, it is important to repeat that mere awareness or recognition of a media content item can represent, on the one hand, various levels of knowledge about the event or issue in question and, on the other, a possibly even more diverse range of respective opinions. The data do not include information about how people perceived the selected content items and events, and as stated above, the selected news items do not refer to established or en-

trenched controversies in German politics. However, the outcome of the Swiss referendum on limiting immigration, for instance, may still be perceived differently by different audiences, even if it does not affect most German citizens directly. The issue to be voted upon by the Swiss people stems from a policy area with a high potential for opinion polarization. So even if seven in ten German respondents (Table 2) reported remembering this topic from the then current news, the variety of what they knew or thought about Swiss immigration laws (or referendums in general, for that matter) remains unknown. It is clear that even if a majority of people are sharing an agenda of important issues, there may still be polarization in the opinions underneath. Polarization is a special case of fragmentation (see section 3.4), which again cannot be further explored with the present study, as a broader approach was chosen and detailed questions about single issues such as the Swiss referendum could not be included. But it would be interesting to apply Vlašić's (2004) concept of metamessages (section 2.1.2) to an issue such as this or other types of media content: Do users perceive the same metamessages? And if they do, how much do their personal views on these messages diverge?

An extension of the present study toward a broader inclusion of the perspective of the users could also not only consider their knowledge and/or opinions about current issues, but their experiences with and opinions on media as well. This seems most pressing for social network sites. What different purposes these platforms, with their wide range of features and types of content, serve for the users would also be interesting with regard to the connections between use of social network sites and integrative status. So far, mainly quantitative studies have looked at the importance of social cues (Messing & Westwood, 2013, 2014) or the structure of people's network of contacts (Bakshy et al., 2015) with regard to the way they select content in social network sites. It would be enlightening to collect the users' viewpoints on these practices as well, especially via qualitative studies. The same is true of the sense that a highly selective and scattered use of Spiegel Online makes for most of the site's users.

In a similar way, a future tri-part study like the present one should cover the same time frame for all substudies. Unfortunately, the survey presented here was conducted about six months after the clickstream and content data had been collected. Therefore, no comparisons can be drawn, for instance, between content awareness and the salience of content items in usage data or on a platform like Spiegel Online. At the same time, when only considering two platforms, it would

be difficult to relate differences in content awareness to the salience of items on just these two platforms.

Lastly, the relationship between users' agency and platform structures would best be studied with platform data rather than one data set exclusively for usage and another one for content only. The present study could not consider where articles from the Spiegel Online archive appeared on the site or how long they stayed there in a more or less prominent position. And neither for the news site nor for YouTube could what users actually saw be captured, also in terms of recommended content, when they accessed the respective sites. But unfortunately, as in this study, the necessary data from platforms for such an analysis are usually not available for third-party research (Wells & Thorson, 2017). As with the other limitations of the current study, this leaves ample room for research into still open questions about the Internet and social integration, on which a final outlook is given below.

9.3 Outlook

Most of the open questions about integration and media from section 5.1 have been dealt with in the previous chapters, yet some points remain open— and other questions result from the presented findings and discussion.

Media use is of course an ever-changing phenomenon—given that media offerings evolve, from technologies, to media organizations, and also content, just as people's living conditions do, within which their media use fulfills specific functions. It has already been mentioned several times in this chapter that more unbundled use of media content can be expected in the coming years, whose effects on the integrative potential of the Internet will have to be left for future studies. This concerns the rising popularity of smartphones and apps, video-on-demand, but also the increased engagement of news media within social network platforms. The latter development could bring more people into contact with news, but probably not in as comprehensive a way as via a newspaper front page, a television newscast, or even a news segment on the radio. This assumption rests on the finding that high-choice environments can lead to a considerable dispersion of users across individual content items. At the same time, people may continue

to want to be informed about current events (Trilling & Schönbach, 2015), and they may also enjoy at least occasionally being part of a very large audience. Live sports competitions will probably remain attractive even if unbundled entertainment use may have become the default for some users. The long-term effects of unbundled media use for more and more purposes remain to be assessed.

Equally open are questions about the media's contribution to integration on the macro level of society. A few suggestions exist on how this could be approached (Jarren, 2000; Schönhagen, 2000; Vlašić, 2004), but their applicability will have to be further explored in the future. This cannot be done by simply equating the aggregated integrative status of individuals with the level of integration of the respective society in general. Putnam's (2000) analysis of a loss of social capital of American society, for instance, is based on data about a declining engagement of citizens in institutions and organizations, which means that they have lower social capital individually. This does not directly indicate, however, that the American society in general is less well integrated. Thus, more direct and truly macro-level indicators for the integration of societies will have to be developed—and then be related to media use and content within this society.

In this regard, maybe the longitudinal analysis of metamessages present in media content can help; by answering the question, for example, of how well-integrated is a society depicted—and thus made visible to its members? What does media content say about integration and prosocial behavior within a society? Messages about choices or behavior that put the individual above the society could also be significant in this regard.

Such an analysis naturally would have to be based on a broad sample of media outlets and content. This is especially challenging for online content, where it is difficult to identify significantly widespread items that not only reach small niches. An extension of the outlets covered here is also desirable for the analyses such as those presented in the current study. In the previous sections, the small number of platforms examined in Chapters 7 and 8 has already been mentioned. In light of the results presented there, it seems fruitful to extend this approach to answer the remaining questions: To what degree can the findings presented above be replicated for other platforms and periods? Likewise, as stated in section 9.1, the limited range of media use variables included in the presented survey demands an extension. Among others, it should be studied how purely online media repertoires relate to content awareness and other integrative media effects.

While the necessity of combining analyses of content structures and patterns of usage has been mentioned repeatedly, another extension for the future should also include algorithms. For online platforms, these determine which content is shown in which order to users (Gillespie, 2012, 2014), and the resulting selection and ranking of content items can differ for individual users. The role of social network sites as distributors of unbundled content needs to be especially scrutinized in this regard (Thorson & Wells, 2016). While outside researchers will not have access to the same kinds of data as in-house teams, knowledge in this area should not only be advanced by proprietary research. And third parties should strive to validate the findings of in-house analyses.

In any case, studies and discussions of the integrative potential of the Internet should continue to compare media or outlets before coming to conclusions about potential echo chamber or filter bubble effects. Some of the respective negative assessments of the Internet with regard to integration versus fragmentation may be due to a disregard for people's continued use of other media. In addition, no baseline had existed for a medium to which strong integrative effects could be ascribed. The results presented in section 6.2 document for the first time that content awareness for different kinds of content turns out to be of a different order of magnitude for front-page news, popular television entertainment, and successful online content. Likewise, use of media was related to these three types of content awareness in different ways. If the study had only looked at online content and use, the integrative potential of the Internet could hardly have been assessed because it would have been unclear what levels of content awareness can possibly be achieved or whether relationships between media use and content awareness are even to be expected. And incidentally, the survey contained the clearest indicators for the realized integrative potential of the Internet, while the subsequent analyses of online repertoires, usage through clickstream data, and comparisons between offered and accessed content on two sites pointed much more toward dispersion of the online usership and thus fragmentizing potential. The study thus results in different conclusions for the integrative potential of the Internet in general, its content, and uses.

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Appendix

Appendix A: Questionnaire (Chapter 6)

Good day!

This online questionnaire contains questions on how you use traditional media and online media. The survey takes about 10 minutes and is anonymous. The data will be analyzed by a research team at Heinrich Heine University, Düsseldorf. They will not be shared with third parties.

Thank you for your participation!

Merja Mahrt (Project manager)

First, here are some questions about you as a person.

[1] Please state your gender.

- female
- male

[2] Please state your age.

- under 18 years
- 18 to 29 years
- 30 to 39 years
- 40 to 49 years
- 50 to 59 years
- 60 to 69 years
- 70 years or older

[3] With what certificate did you leave school?

Please state the highest certificate you have received.

- left school without a certificate
- secondary education I [Hauptschulabschluss, Volksschulabschluss]
- secondary education II [Mittlere Reife (Realschule, Polytechnische Schule)]
- advanced technical college entrance qualification [Fachhochschulreife]
- higher education entrance qualification [Abitur, Hochschulreife]
- other: _____
- still going to school

[4] What is the net monthly income of your household, after taxes have been deducted?

- less than 500 euro
- 500 to under 750 euro
- 750 to under 1,000 euro
- 1,000 to under 1,250 euro
- 1,250 to under 1,500 euro
- 1,500 to under 2,000 euro
- 2,000 to under 2,500 euro
- 2,500 to under 3,000 euro
- 3,000 to under 4,000 euro
- 4,000 to under 5,000 euro
- 5,000 to under 7,500 euro
- 7,500 to under 10,000 euro
- 10,000 euro or more

[Respondents who did not meet the (still open) quota were directed to an end page at this point.]

We continue with some questions about your use of media.

[5] How often do you use the following media?

	Daily or almost daily	Two to three times a week	About once a week	Two or three times a month	More rarely	Never	Don't know
Watch TV (on a TV set)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Watch TV online (e.g., via video archives, live streams, video on demand)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listen to the radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read printed newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read printed magazines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use the Internet (overall)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use social network sites on the Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[6] How interesting or uninteresting do you find the following types of media content?

	Very interesting	Interesting	Middling	Not very interesting	Not at all interesting	Don't know
Stories, narratives (e.g., films, TV series, novels, fairy tales)	<input type="radio"/>	<input type="radio"/>				
Current events (e.g., news, reports)	<input type="radio"/>	<input type="radio"/>				
Sports	<input type="radio"/>	<input type="radio"/>				
Music	<input type="radio"/>	<input type="radio"/>				
Celebrities, scandals	<input type="radio"/>	<input type="radio"/>				
Wild life, animals	<input type="radio"/>	<input type="radio"/>				
Historical events (e.g., documentaries, biographies)	<input type="radio"/>	<input type="radio"/>				
Cultural events (e.g., theater, concerts)	<input type="radio"/>	<input type="radio"/>				

[7] How often do you use the following types of websites for information about news and current events?

Websites of . . .	Daily or al-most daily	Two to three times a week	About once a week	Two or three times a month	More rarely	Never	Don't know
Newspapers (e.g., sueddeutsche.de, faz.de, local newspapers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Magazines (e.g., spiegel.de, stern.de)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TV stations (e.g., ard.de, rtl.de, ntv.de)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Radio stations (e.g., swr3.de, wdr3.de)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E-mail providers (e.g., t-online.de, 1&1, gmx.de, web.de)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social network sites (e.g., twitter.de, facebook.de)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wikipedia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blogs (e.g., wordpress.com, blogger.com)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search engines (e.g., Google, Bing)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RSS feeds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[8] How often do you use the following websites for entertainment and pastime?

Websites of . . .	Daily or al-most daily	Two to three times a week	About once a week	Two or three times a month	More rarely	Never	Don't know
TV stations (e.g., archives of ARD and ZDF, rtlnow.de)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Video platforms (e.g., vimeo.com, youtube.com, myvideo.de)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lists of funny images or animations (e.g., buzzfeed.com, tumblr.com, heftig.co)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blogs (e.g., wordpress.com, blogger.com)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social network sites (e.g., facebook.de, twitter.de)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Filter: If respondents said they used social network sites more frequently than “never” to question 5, they were asked for frequency of use in more detail:]

[9] How often do you use the following social network sites?

	Daily or al- most daily	Two to three times a week	About once a week	Two or three times a month	More rarely	Never	Don't know
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[10] How important or unimportant are these social network sites for information for you to learn about news and current events?

	Very im- por- tant	Im- por- tant	Midd- ling	Not very impor- tant	Not at all impor- tant	Don't know	Don't use
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[11] How important or unimportant are these social network sites for information for you to learn about entertaining videos, images, or texts?

	Very im- por- tant	Im- por- tant	Midd- ling	Not very impor- tant	Not at all impor- tant	Don't know	Don't use
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[End of filter]

[12] Please tick whether you remember these news from the last several days.

	Yes	No	Not sure
Federal parliament debates zero-deficit budget	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motion of censure against President of the European Commission Juncker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Federal Administrative Court imposes limits on work on Sundays	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Violent protests in Ferguson, MO (USA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Study reveals faults in school food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swiss people vote against law supposed to limit immigration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer virus "Regin" spies on ten countries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lilly Becker reportedly did not pay 4,300 euro hairdresser bill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YOLO is youth word of the year	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lewis Hamilton is Formula 1 champion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[13] Please tick whether you have seen at least parts of these programs of the last several days or not.

Please also think of programs that you may have recorded or watched in an online archive or similar venue.²⁴

	Yes	No	Not sure
Tatort: Die Feigheit des Löwen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Pirates of the Caribbean</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Champions League Leverkusen : Monaco	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Celebrity Big Brother	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die 2 – Gottschalk & Jauch gegen alle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das Adventsfest der 100.000 Lichter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>The Hobbit: An Unexpected Journey</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Team Wallraff – Reporter prüfen nach: Burger King	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das große TV total Turmspringen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
heute show	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

²⁴ Each of the items was accompanied by a screenshot from the respective program, which are omitted for copyright reasons here. Please contact the author for the original version of the questionnaire.

[14] Please tick whether you know these online content items from the last several weeks or not.²⁵

	Yes	No	Not sure
Der Postillon: Deer are required to wear safety vests to avoid traffic accidents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LeFloid: On bird flu and Ken Jebsen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parents use a smartphone for the first time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A woman walks the streets of NYC for ten hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dagi Bee styles her boyfriend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Jurassic World</i> – Trailer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grandmothers try marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rechts gegen Rechts – involuntary charity run	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gronkh: Let’s play video of “The Evil Within”	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Campaign against TTIP agreement: Shadow jurisdiction for large corporations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25 Each of the items was accompanied by a screenshot from the respective video or website, which are omitted for copyright reasons here. Please contact the author for the original version of the questionnaire.

Now follow a few questions about your relationships with people you know.

[15] Please indicate how much you agree with the following statements about people you know, from completely agree to completely disagree.

	Com- pletely agree	Agree	Neither agree nor dis- agree	Dis- agree	Com- pletely dis- agree	Don't know
There are several people I trust to help solve my problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is someone I can turn to for advice about making very important decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no one that I feel comfortable talking to about intimate personal problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel lonely, there are several people I can talk to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I needed an emergency loan of 500 euro, I know someone I can turn to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The people I interact with would put their reputation on the line for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The people I interact with would be good job references for me.	<input type="radio"/>					
The people I interact with would share their last money with me.	<input type="radio"/>					
I do not know people well enough to get them to do anything important.	<input type="radio"/>					
The people I interact with would help me fight for a good cause.	<input type="radio"/>					

[16] Please indicate how much you agree with the following statements about your relationships with other people, from completely agree to completely disagree.

	Com- pletely agree	Agree	Neither agree nor dis- agree	Dis- agree	Com- pletely dis- agree	Don't know
Interacting with people makes me interested in things that happen outside of my city or town.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with people makes me want to try new things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Interacting with people makes me interested in what people unlike me are thinking.	<input type="radio"/>					
Talking with people makes me curious about other places in the world.	<input type="radio"/>					
Interacting with people makes me feel like part of a larger community.	<input type="radio"/>					
Interacting with people makes me feel connected to the bigger picture.	<input type="radio"/>					
Interacting with people reminds me that everyone in the world is connected.	<input type="radio"/>					
I am willing to spend time to support general community activities.	<input type="radio"/>					
Interacting with people gives me new people to talk to.	<input type="radio"/>					
I come in contact with new people all the time.	<input type="radio"/>					

[17] Please indicate how close you feel to the following spaces and its people, from very close to not close at all.

	Very close	Rather close	Middling	A little close	Not close at all	Don't know
With the town or city in which you live and its people	<input type="radio"/>					
With your state [Bundesland] and its people	<input type="radio"/>					
With Germany as a whole and its people	<input type="radio"/>					

[Filter: If respondents said they used Facebook more frequently than “never” to question 9, they were asked for the structure of their network of contacts on the platform:]

On Facebook, one can connect with lots of different people and “friend” them.

[18] How many of such contacts do you have on Facebook, roughly speaking?

- 0
- 1 to 20
- 21 to 50
- 51 to 100
- 101 to 150
- 151 to 250
- 251 to 500
- more than 500
- don't know

[19] When you think about the people with whom you interact the most on Facebook, how much alike or not alike are these people with regard to their opinions and attitudes?

Please think about the people whose posts you read and comment on or whose posts you often “like.”

- very much alike
- alike
- alike and not alike
- not alike
- not at all alike
- don’t know

[End of filter]

[Filter: If respondents said they used Twitter more frequently than “never” to question 9, they were asked for the structure of their network of contacts on the platform:]

On Twitter, one can connect with lots of different people by “following” them, which means that one subscribes to their posts.

[20] How many people do you “follow” on Twitter; that is, roughly speaking, the posts of how many people are you shown?

- 0
- 1 to 5
- 6 to 15
- 16 to 30
- 31 to 50
- 51 to 100
- 101 to 300
- more than 300
- don’t know

[21] When you think about the people with whom you interact the most on Twitter, how much alike or not alike are these people with regard to their opinions and attitudes?

Please think about the people whose posts you read, comment on, or forward (“retweet”).

- very much alike
- alike
- alike and not alike
- not alike
- not at all alike
- don't know

[End of filter]

Finally, we have two questions about your employment situation.

[22] What is your current employment status?

- employed full time
- employed part time
- trainee [Lehrling/Azubi]
- student in school [Schüler/in]
- student at university [Student/in]
- in vocational rehabilitation
- currently unemployed
- civil service, community service [Bundesfreiwilligendienst, Freiwilliges Soziales Jahr (FSJ)]
- retired
- on parental leave
- not working [nicht berufstätig (Hausfrau/Hausmann)]

[Filter: If respondents said they were full or part-time employed to question 22, they were asked about their current profession:]

[23] Please select your profession from the following list. If more than one option applies to you, please select the one that describes your main profession.

- Worker [Arbeiter/in]
- Employee [Angestellte/r]
- Public official, judge, soldier
- Professional, e.g., doctor, lawyer
- Self-employed in trade, commerce, industry, or service
- Farmer
- Helping in a family-run business
- in vocational training

[End of filter]

[Filter: If respondents said they were retired to question 22, they were asked about their former profession:]

[24] Please select your last profession from the following list. If more than one option applies to you, please select the one that describes your main last profession.

- Worker [Arbeiter/in]
- Employee [Angestellte/r]
- Public official, judge, soldier
- Professional, e.g., doctor, lawyer
- Self-employed in trade, commerce, industry, or service
- Farmer
- Helping in a family-run business
- in vocational training

[End of filter]

Thank you for your participation?

For questions or comments, please contact the project manager, Merja Mahrt.
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Appendix B: Codebook for Spiegel Online content (Chapters 7 and 8)

The main topic of a Spiegel Online article is coded. The topic should generally be inferred from the headline. Only if the latter, in conjunction with its URL and the tags included in it, does not allow for a categorization, is the article in question accessed via the browser.

If the article refers to more than one main topic, the topic is coded as 9999 (e.g., “Frankfurt stock exchange reacts to Ukrainian crisis and terror in Syria” refers to both the Ukrainian crisis and the situation in Syria and its topic is coded as 9999 [missing]).

Topics are ordered by their usual section, but articles referring to the same topic under another section are still coded with the dominant section of the topic. Topics marked with an asterisk have been added to the codebook for the analysis of the broader news archive (Chapter 8), while for the clickstream data a more restricted list of frequently accessed topics was sufficient (Chapter 7).

Politics

1001 Elections to the European Parliament

Building of European Parliament groups following the election from 22–25 May; discussion about suitable President of the European Commission, subsequent nomination and election of Jean-Claude Juncker; discussion about suitable President of the European Parliament, subsequent nomination and election of Martin Schulz; conflict between British Prime Minister David Cameron and other European leaders about Mr. Juncker.

1002 Ukrainian crisis

Conflict in East Ukraine, fights between separatists and forces loyal to the Ukrainian government; Crimean crisis; Euromaidan; Ukrainian politics that relate to the conflict in East Ukraine/with Russia; talks between Ukrainian and/or Western politicians and Russian leaders in order to solve the conflict.

1003 ISIS

Islamist/ISIS-related terror in Syria and/or Iraq and neighboring countries; bombings; reactions by local or international governments to such events; effects of ISIS actions on civilians; jihadism/Islamic extremism in Syria and/or Iraq; fears about ISIS in Europe.

1004* Civil war in Syria and Syrian politics

Actions of the Syrian army in the civil war; Bashar al-Assad is reelected President. *If both actions of Syrian army and ISIS are the focus of the article, topic is coded as 9999.*

1005 NSA scandal

Secret services (NSA, GCHQ) spying on electronic communication in other countries; Edward Snowden's leaks about such practices; spy program PRISM; surveillance of Chancellor Angela Merkel's cell phone; collaboration of German secret services (BND) with foreign services.

1006 D-Day 70th anniversary, other anniversaries of WWII

Festivities for 70th anniversary of Allied landings in Normandy on 6 June, 1944, including preparations and aftermath; meetings of political leaders around the event; other WWII-related anniversaries (e.g., Oradour-sur-Glane massacre, 10 June, 1944); articles about Hitler and/or Nazi Germany referring to these events. *If both meetings of leaders for D-Day and talks about Ukrainian crisis are the focus of the article, topic is coded as 9999.*

1007* Refugee crisis

Refugees, in particular from sub-Saharan Africa, arriving in Europe; migratory routes across the Mediterranean; maritime disasters; European policies regarding refugees and/or asylum-seekers; treatment of refugees by European authorities, in particular in Italy; protests against treatment of refugees and/or respective policies; refugees as a global phenomenon, migration "crisis."

1008 Minimum wage

German federal parliament (Bundestag) debates introduction of minimum wage; respective plans proposed by Minister of Labor and Social Affairs, Andrea Nahles.

1009 Berlin Brandenburg Airport

Problems and delays in the construction of new international airport south of Berlin; alleged mismanagement, poor planning, and corruption; criticism of, most prominently, airport CEO Hartmut Mehdorn and chair of the board, and Mayor of Berlin, Klaus Wowereit.

1010* Conflicts within CSU party in Bavaria

Criticism of Horst Seehofer, Minister President of Bavaria and president of conservative party CSU, for the party's low share of votes in the election to the European Parliament; debate about leadership and policies; closed-door meeting of party leaders.

1011* NSU trial

Crimes of the so-called NSU ("National Socialist Underground"); respective investigations and trial; anniversaries of NSU-related crimes.

1012 Christian Wulff's book

Former President of Germany publishes memoirs about scandal and resulting media coverage that had led to his resignation from office in February 2012.

1013 Felipe VI of Spain

Abdication of Spanish King Juan Carlos I (announced 2 June); ascension to the throne by his son Felipe (19 June); articles on Juan Carlos, Felipe, and/or his wife Leticia; Spanish monarchy.

The trial against Infanta Cristina of Spain is only coded here if the state of the Spanish monarchy in general is the focus of the article.

1014* Kidnapping of teenagers in Israel

Search for three Israeli teenagers kidnapped on 12 June by Al-Qassam Brigades in the West Bank; discovery of their bodies on 30 June; Palestinian attacks in southern Israel; retaliation against Palestinians by Israeli armed forces.

1015* Bowe Bergdahl

Prisoner exchange between US and Taliban; American sergeant Bowe Bergdahl is released from captivity and subsequently brought back to America; debate about how much his capture was his own fault; release of prisoners from Guantanamo Bay detention camp.

Articles about Guantanamo in general are not coded here.

1016* Situation in Afghanistan

Political situation in Afghanistan; Presidential election; bombings; actions of Taliban in Afghanistan.

1017* Situation in Pakistan

Political situation in Pakistan; bombings and subsequent government reactions; actions of Taliban in Pakistan.

1018* Boko Haram terror in Nigeria

Terrorist actions of Islamic extremist group Boko Haram in Nigeria; bombings in public places; kidnapping of schoolgirls.

Not all articles about Nigeria are coded here!

1019* Christian woman sentenced to death in Sudan

International efforts to help free Meriam Ibrahim, a Christian woman from Sudan imprisoned and sentenced to death because of her faith.

1020* Situation in Libya

Political situation in Libya; Presidential election; bombings; capture of Ahmed Abu Khattala, assumed to have been prominently involved in Benghazi attack in September 2012; further Benghazi-related investigations.

1021* Wiretapping scandal in Warsaw

Government crisis in Poland due to wiretapping of politicians in Warsaw restaurants; President Donald Tusk and his government are demanded to resign.

1022* Banking crisis in Bulgaria

Government and banking crisis in Bulgaria.

Appendix

1023 Anniversary of beginning of WWI

Centenary of assassination of Archduke Franz Ferdinand of Austria (28 June, 1914); other articles about (beginning of) WWI; efforts to commemorate WWI.

Economy

2001 European debt crisis

European debt crisis and reactions from politics and economy; austerity policies; economic troubles in Southern Europe; efforts by European Central Bank to counter the crisis; lowering of interest rates by ECB and its effects; deflation; ECB President Mario Draghi's policies; reactions to ECB decisions, e.g., from German Federal Bank.

2002* Economic crisis in Argentina

Debt crisis in Argentina and reactions from politics and economy; conflict about payments to hedge fund.

Miscellaneous ("Panorama")

5001 Cave rescue in Bavarian Alps

Rescue of injured explorer Johannes Westhauser from Riesending cave, near Berchtesgaden.

5002 Pentecost weekend storms

Storms in North Rhine-Westphalia; Pentecost weekend storms; low pressure area "Ela;" damages and aftermath, including problems with train service due to damages to overhead contact lines.

5003 Paramedic in Riyadh

Story about a German paramedic in Saudi Arabia.

5004 Michael Schumacher

Retired racing driver Michael Schumacher awakens from coma; also related articles in which, e.g., a neurologist explains the effects of a long-term coma.

5005 Frank Schirrmacher

Frank Schirrmacher, journalist and co-publisher of Frankfurter Allgemeine Zeitung, dies; obituaries.

5006 Böhse Onkelz

Concert by controversial rock band Böhse Onkelz.

5007 Purity Balls

Balls for abstinent teenagers in the US; slideshow with pictures of girls with their fathers at the ball.

5008 Rock am Ring

Music festival and related trial.

5009* Malaysia Airlines Flight 370

Ongoing mystery about Malaysia Airlines Flight 370, missing since 8 March, 2014; search for plane wreck.

5010* Hélène Pastor

Murder of Hélène Pastor, the richest woman in Monaco, and subsequent investigation.

Sports

7001 Men's soccer World Cup in Brazil

World Cup in general; individual games; pre-game articles; tryouts; composition of national teams, who makes the squad; individual prominent players in the tournament; rules applied in the tournament; referees at World Cup; Brazil as host country; conflicts in Brazil about the World Cup; oracles to predict match outcomes; soccer fans at World Cup; World-Cup-

themed recipes; tips, e.g., how to get a day off from work to be able to watch a game broadcast at night.

General articles about Brazil or Brazilian politics without a focus on the World Cup are not coded here.

Articles about previous World Cups (“the most beautiful goals of all times”) or obituaries about former World Cup players are not coded here.

Background articles about the type of injury that kept players from playing in the tournament are not coded here (e.g., Marco Reus).

7002* Soccer transfers

Transfers in German and international soccer leagues; extensions of contracts; who leaves, who stays, all with regard to players and coaches.

7003 FIFA scandal

Allegations of corruption about 2022 FIFA World Cup in Qatar; allegations of corruption against Qatari FIFA official Mohamed bin Hammam; criticism of FIFA President Sepp/Joseph Blatter; scandal about Franz Beckenbauer, member of FIFA executive committee; discussions about leaders of German soccer association DFB.

7004* Hockey World Cup

Men’s and women’s hockey World Cup in Den Haag, The Netherlands.

7005* French Open

Tennis tournament in Paris.

7006* Wimbledon

Tennis tournament in London.

7007* Handball World Cup playoffs

Playoffs for qualification to handball World Cup in Qatar; reactions from German handball association DHB to elimination of German team.

7008* Johannes Strassmann

Professional poker player Johannes Strassmann dies.

Technical categories

9997 Missing content

Topic cannot be coded due to missing video or article or similar reasons.

9999 More than one topic

Two or more main topics present.

0 Other

None of these topics present.

Appendix C: Codebook for YouTube videos (Chapter 8)

The video is opened in the browser but does not have to be watched entirely.

When more than one code is available, the more specific code is selected: A hip hop video is coded as “hip hop” (110) for Genre, not “music” (100).

Genre

100 Music

Music videos, concert tapings.

Parodies of music videos are coded as Comedy (300).

110 Hip Hop

120 Pop

130 Rock

140 Electronic music

Including house, techno, electronic dance music.

200 Video games

Recordings of games while playing (let’s play videos, walkthroughs), critiques of video games.

300 Comedy

Comedy is the main topic or purpose of the video; includes parodies of songs.

Difference from Vlogging (400) is sometimes difficult as some vlogs are quite humorous. If the joke is the center of the video (as in a sketch or when a clear punchline is developed), this is coded as Comedy. If the video rather recounts amusing anecdotes from everyday life, this is coded as Vlogging.

310 Memes

Videos that are part of a certain online trend and clearly refer to it by either repeating, adapting, or parodying the original video. Examples from 2014 are:

311 Ice Bucket Challenge

To raise awareness for a genetic muscle disease and funds for respective research, people empty buckets of ice water over their heads.

312 First Kiss

A viral commercial shows two supposed strangers meeting and kissing for the first time.

320 Animals

Videos about cute or funny animals (a famous classic video is the sneezing panda baby).

330 Fails

Videos of funny mishaps, often marked as “fails.”

400 Vlogging

Everyday life videos, usually of a person (or persons) talking directly into the camera in an everyday setting (like a living room or bedroom).

Includes challenges, where vloggers contribute to an ongoing theme and nominate other vloggers to follow their example.

410 Relationships

Vlogs covering romantic relationships, friendships, family ties.

420 Shopping and fashion

Includes “haul” videos where a vlogger shows what they bought at fashion stores and style tutorials that show how to wear, combine, or accessorize clothing.

430 Beauty

Includes makeup tutorials and “haul” videos on beauty products.

Appendix

440 Work, school, university

Videos about experiences at work (including internships), school, or university.

450 Sports

Videos about the sports practice of the vlogger (not professional sports, which are coded under Sports, 600). Includes tips for training, exercise and sports-related nutrition.

500 Current events

News and commentary on political and societal topics.

The code is applied rather widely; general information or commentary on societal or political issues are also included (e.g., how the electoral system works).

600 Sports

Sport events, interviews directly related to sports (usually professional sports). *Commercials featuring athletes are coded as Commercials (800), lifestyle topics, e.g., marriages or fashion style of athletes, as Celebrities (900).*

610 Soccer

Professional soccer, excerpts from games, post-match interviews etc.

611 World Cup

Men's soccer World Cup in Brazil, excerpts from games, post-match interviews etc.

700 TV

Television series and entertainment programs, including excerpts from TV programs, promotional videos for programs (e.g., presentations of candidates for a game show or casting show, trailers for TV shows).

Excerpts from news programs are coded as Current Events (500).

800 Commercials

Includes trailers for movies or video games → professionally produced content, obviously as part of strategically planned campaigns.

900 Celebrities

Videos about famous people, reactions to meeting famous people.

910 Traditional celebrities

Famous actors, athletes, musicians, directors, designers, etc.

920 YouTube stars

Well-known YouTubers and their fame are the topic of the video, their celebrity status is the focus of the video (e.g., meet and greets, thank you videos to the fans, awards etc.).

Videos of famous YouTubers spending time together (e.g., having dinner or hanging out at the YouTube house in Cologne) are coded under Vlogging (400).

1000 YouTube series

Entertaining formats exclusive to YouTube (e.g., talk shows, game shows, lists of “top 10 XYZ”).

Longer videos that have a series-like character, but are only available on YouTube, are coded here, e.g., a hip hop-themed talk show by rapper Kollegah. The game-show-like series “Let’s Draw” from channel ApeCrime is coded here.

9999 Other

Author

The creator of the video is coded here. Only successful authors are coded here (see following list), the others are coded as “other” (99). If more authors turn out to be frequent (three or more videos in the sample), they are added to the list. For YouTubers (typical of vlogs, let’s play videos, many other user-generated categories), the channel is usually named after the author. If the same people run more than one channel (e.g., the people in the videos from channels SPACE FROGS and SPACE RADIO are the same) they are coded as one author. Music videos are often uploaded to a label channel. In these cases, the artist or band is coded as the author (e.g., music label Banger Musik runs the channel BangerChannel, which features videos by rappers Farid Bang, KC Rebell, and others. These are coded for the individual rappers.)

Exception: The channel JuliensBlog hosts rap battles for unknown hip hop artists. Here, JuliensBlog is coded as the author.

If a musician is “featured” in another musician’s video, the artist or band mentioned first is coded as the author, as they should usually have the major part in the video.

- 2 Kollegah
- 3 Farid Bang
- 4 LeFloid
- 5 Dagi Bee
- 6 TopZehn
- 7 Sido
- 8 iBlali
- 9 ungespielt/ungefilmt
- 10 PietSmiet
- 11 Dner
- 12 Sarazar
- 13 LetsTaddl/Taddl
- 14 Gronkh
- 15 ApeCrime
- 16 BibisBeautyPalace
- 17 Inscope21
- 18 PewDiePie
- 19 SPACE FROGS/SPACE RADIO
- 20 JuliensBlog
- 21 DieAussenseiter
- 22 FailArmy
- 23 coldmirror
- 24 KC Rebell
- 25 Majoe
- 26 Watchever
- 27 DieLochis
- 28 Y-Titty
- 99 Other

Language

The language in the video content itself is coded, not the language of the video title, description, or comments. Spoken language is generally considered. If there are subtitles and spoken language, the language of the spoken part is coded. If the video mainly consists of written language (as in animations), the language of the writing is coded.

For music videos, the (dominant) language of the lyrics is coded.

- 1 German
- 2 English
- 3 Other
- 4 No language (this can apply, e.g., to animal videos, “fails,” excerpts from sporting events without spoken commentary etc.)
- 9 More than one (dominant) language

About the author

Dr. Merja Mahrt is a research associate at the Institute for Social Sciences at Heinrich-Heine-Universität in Düsseldorf, Germany. She studied communication and media studies as well as French language and literature at Freie Universität Berlin, Germany, and Université Michel de Montaigne – Bordeaux III, France. The topic of her *Magister* thesis was the role of conversations about media for a local community in rural Germany. In 2010, she received her PhD in social sciences from the Universiteit van Amsterdam, The Netherlands, with a study on how personal values influence media use and on respective changes due to an increased media offering. Her thesis director was Klaus Schönbach. From 2007 to 2009, she was a member of the PhD program of the Amsterdam School of Communications Research. The present work is her *Habilitation* thesis, accepted by the Faculty of Arts and Humanities at Heinrich-Heine-Universität in October 2017.

Merja Mahrt's research interests are media use, social functions, and effects of media, especially the comparison of digital with traditional mass media. She has coedited *Twitter and society* (Peter Lang, 2014; translated to Turkish in 2016) and is the author of several articles on big data and its potential for communication research. From 2010 to 2012, she was speaker of the interdisciplinary junior researchers' group *Science and the Internet* at Heinrich-Heine-Universität.

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