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‘Don’t @ me’
analysing online expression affordances on IRC and Twitter

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‘Don’t @ me’
Analysing online expression affordances on IRC and Twitter

Stijn Peeters
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Stijn Peeters

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Winchester, United Kingdom, April 2018
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Abstract
1. **Introduction: online social platforms and the fabric of modern life**

On 26 February 1985, Henry Nussbacher had had enough. The computer network he managed—that of the Weizmann Institute of Science in Israel—had been brought to its knees by students using it to chat with each other. He quickly sent an e-mail to other administrators on the network. Calling for action against this “abuse with a capit[a]l A”, Nussbacher calculated just how much strain the students were putting on the systems, which were intended for sharing scientific results. “When 20 users are on a CHAT system channel, [each minute it] will have 1520 OUTGOING messages to deliver,” he warned. “Yes, 1520 outgoing messages per minute!” Indeed, any system would buckle under such a barrage of chatting.

We’ve come a long way since 20 chattering students could bring down the internet. Facebook, the world’s biggest social network site, boasts 1.40 billion daily active users as of January 2018, or almost 20% of the world population. Yet in other ways, not much has changed since 1985. Despite the internet’s potential as a platform for academic collaboration, education and other wholesome projects, these types of use are dwarfed by the dominance of online social platforms such as Facebook, WeChat, Twitter and Instagram.

From children that continue classroom conversations on SnapChat after school is out, to heated Twitter-based debates about who should be the next president of the United States of America; such platforms matter. They are not just places to chat or socialize; they have the power to change things too, and political parties and interest groups increasingly often turn to the internet to promote and advance their causes. This is an aspect of online platforms that has its dark sides as well, as people learn to abuse the ubiquity and algorithmic nature of these platforms to manipulate debates, drum up support for questionable ideas or smear an adversary. Meanwhile, besides these mediagenic dimensions of the Facebooks and Twitters, both the revolutionary and the unsavoury, there are billions of people posting holiday pictures, discussing the latest TV series or asking for housekeeping tips on the very same platforms.
They are, therefore, an ever more essential part of the fabric of our society. And as these platforms continue to make themselves more and more indispensable, it becomes more and more significant how we present ourselves on them. Many of these platforms require us to create a ‘profile’, with a photo, full name, and whatever other types of information the powers that be have decided are important for us to share. A tailor-made ID, a set of information that will inevitably give someone a first impression of us, maybe scoring us that one job or, if it matches certain parameters, putting us to the attention of surveillance. These online self-presentations matter. This is not surprising—it has always been important how we present ourselves, and the emergence of the internet has just added another dimension to this. It is not just enough to dress well and be on time going to an interview; better make sure entering your name in a search engine doesn’t turn up a messy termination at a previous job.

This is of course a global phenomenon. Facebook is perhaps the most well-known online social platform in the Western world, and the largest worldwide in terms of user base, but it is by no means the only one. Russia has VKontakte; Korea has Daum and Naver; China has WeChat and Weibo; and other smaller platforms such as the Dutch Hyves have been able to attract significant audiences as well. Even in the Anglophone world Facebook by no means has a monopoly; Twitter, SnapChat and Instagram all boast hundreds of millions of active users, with interfaces available in dozens of languages. Not even censorship seems to make such platforms less attractive, as is clear from the massive popularity of Chinese networks such as Baidu and WeChat.

What all these platforms have in common is that they were introduced in the first decade of the 21st century. Their direct lineage can be traced back to a little earlier still; platforms such as SixDegrees (1997) and MySpace (2001) were similar enough to these modern platforms to call them forerunners, and share many features and characteristics such as the social graph, an articulated network of who is ‘friends’ with who. But even when going back further in time, it is obvious that the internet has always been a place for self-expression and self-presentation, and even if older social platforms like Usenet, IRC or ICQ were not ‘social networks’ in the sense that Facebook and Twitter are, they were certainly social. From news groups focused on dating to elaborate multiplayer role playing in MUDs, people have always utilized the internet as they utilized any other mode of communication: to get to know and talk to each other.
Moreover, as Zizi Papacharissi put it, “we have always been social” (2015, p.1); even these earlier platforms were not particularly revolutionary for offering people a way to interact with each other, as that is what people have been since the dawn of time. The realisation that the platforms I discuss in this thesis are social platforms is such somewhat banal; in fact it would perhaps be far more exciting to discover a non-social platform, though “even the rejection of social activity is, in effect, a social decision and behaviour” (ibid.).

Why then even note that the platforms I investigate here are social platforms? For one, while one can indeed argue that any platform is social, those I look at here put their sociality at the forefront, at the core of their platform. They are set up to facilitate interactions between people, and those who have created the platform have made conscious choices to facilitate it in a certain way. They are, in effect, position papers on how humans should interact with each other. The arguments take the shape of code, features, interfaces, guidelines and affordances rather than carefully written paragraphs of text. But they are worth unpacking and engaging with all the same, as their authors occupy positions of considerable influence, their positions being imposed on the millions of people using their platform.

Furthermore, “the social in social media is not a fact but doing” (Bucher 2015, p.2); sociality is constantly being performed in these spaces, with people putting these position papers into practice, creating new connections with others in the same space and suspending others. “Every click, share, like, and post creates a connection, initiates a relation” (ibid.); as people say things, share things, produce content, they are doing so in a shared space, where others will see what they say or create, interact with it, and so on.

The sociality I am interested in here is thus the sociality that emerges from people interacting with a platform that has a particular view of how people should be able to interact with each other on it, a view that it attempts to realize through the design and set-up of itself, which people then engage with in the process of ‘doing social’.

Over the past few decades, this doing social has slowly moved on from monochrome text-based interfaces to modern apps that have no problem entertaining us with live video, emoji-filled stories and user-friendly photo filters. More and more
kinds of content are supported by online platforms—people can express themselves in myriads of ways, from the self-destructing photo captions of Snapchat to the rich multimodal blog posts on Medium. There is a tool for every task: Twitter for quick takes on the daily news, Instagram to share vacation pictures with those still at home, IRC for help when the computer suddenly doesn’t work anymore, Twitch to watch others play video games. Some of these platforms have millions or even billions of users; others are extremely niche and serve only a small group of people. But while the audiences and features of these platforms are highly varied, in the end they all facilitate online communication and sharing.

Platforms often present themselves as being suitable for a specific purpose or having a particular ‘mission’. Twitter, when it was launched in 2006, initially presented itself as the place to share status updates, directly asking the people visiting their site “what are you doing?”. Likewise, then-young Facebook presented itself as “a social utility that connects you with the users around you” at the time, while blogging platform Tumblr was promoted as a place to keep an “online scrapbook”. None of these accurately describe how people would end up using these platforms over the following decade; Twitter is a popular place to comment on news, discuss politics, and joke around, none of which match what the founders envisioned when they asked people to talk about what they were doing. Facebook is less and less about connecting people with each other and more and more about connecting people with brands or news outlets. And Tumblr, while certainly being a scrapbook for some, has also become one of the premier pornography sites on the internet. This latter case is an interesting evolution especially considering its later acquisition by Yahoo, an internet company with a decidedly more corporate and ‘family-friendly’ image. Prompted by worry from Tumblr’s users, Yahoo CEO Marissa Mayer was quick to reassure them that she would “let Tumblr be Tumblr” (quoted in Simpson, 2013, on The Wire).

Here already some of the themes of this thesis are visible. Online social platforms such as Tumblr, Facebook, Twitter and many others exist in a volatile ecology of competing interests, evolving technology, stubborn users and an often invisible but massive infrastructure supporting all of this. Pornography could technically be a hit anywhere on the internet; yet Tumblr became the platform of choice for it, at least for
a sizeable number of enthusiasts. What made Tumblr more suitable for this than, say, Facebook? Content policies, perhaps; anonymity, maybe; possibly the demography of the people using the site. Either way, Tumblr had the right set of features and affordances to become a surprise hit in this area. And these features and affordances did not come out of nowhere. They were there for a reason; choices made by developers, the technology that was available to them, the atmosphere created by the early adopters, et cetera. Many factors and forces, which eventually culminated (and continue to culminate) into the platform we call ‘Tumblr’. A similar story can be told for virtually any platform.

Through this all people continuously express themselves, using these platforms to cultivate their identities and share and discuss things that are important to them. They have to negotiate what is essentially a shared space; sometimes looking for debate, seeking like-minded people in a chat channel or through including an appropriate hashtag in a tweet. At other times, would-be commenters are staved off by marking a conversation as private, kicking people out, or in lieu of such technical features, simply telling any reader to “don’t @ me” in an attempt to clearly demarcate the rules of a discussion space manually where the platform offers no direct features through which to do so. Hence the title of this thesis; the simple phrase signifies the complex relation between a platform and the people using it, where a platform’s specificities are negotiated in different ways, such as resistance, acceptance, or subversion.

It is this dynamic—between a platform’s specificities and how people express themselves through those, in negotiation with those specificities—that I intend to map and analyse in this thesis. More precisely, I will answer the question of how a platform’s features and affordances are developed, and how they give rise to certain genres of expression. In other words, my main research question is: How do platforms end up with a set of affordances specific to them, consequently affording a specific genre of expression? My goal is to answer this question in such terms that we acquire a better understanding of how the platforms through which we express ourselves are built, and how they invariably turn out to promote specific types of expression while being less likely to be utilized for others. I will do so guided by three sub-questions that cover various aspects of this project:
How does the technology on which a platform is based shape the affordances of the platform with regards to self-presentation?

This may sound like a paradoxical question; after all, is the idea of a technology that shapes something built on or with that technology not another way of talking about the affordances of that technology? The point here, however, is that affordances are perhaps at work on multiple levels; a user must deal with the affordances of a platform which will inevitably shape their expressions on that platform; the platform and its developers in turn must deal with the affordances of the hardware and software it is built on, which will likewise shape the platform, as well as the techno-political and socio-technological paradigms and influences that exist as it is created. It is the relation between these ‘layers’ of affordances that will be investigated here; the goal is to arrive at an impression of what influences the development of a platform and its affordances—what affordances produce other affordances, as it were. When speaking of affordances in a software context, often this is done in terms of a specific feature or specific subsystem; e.g. Facebook’s ‘Like’ button or posting a photo on Twitter. But such features, and affordances, are in turn made possible by their underlying technology and context; an analysis of this can thus clarify how platforms in the end shape expression and self-presentation.

What are the roles of 1) the platform’s creators and 2) the people using it in determining what the platform is used for?

Unavoidably, a platform reflects the intentions of its creator(s). A platform on which self-presentation is possible thus reflects certain values and considerations which, consciously or unconsciously, influence how people express themselves on it. Considering the increasing importance of online self-presentations, it is essential to document and analyse such influences. But it is not just the vision of the platform’s creator that has agency here. In the end, the people using the platform are the ones to decide how it is used; and thus they have a role in shaping the platform and determining which modes of expression are successful and popular. The question is how their agency in this process can be characterized. There is a tension between, on the one hand, the platform’s design which is optimized for certain types of usage; and on the other hand the people who end up using the platform, but with goals that may or may not align with these intentions. To understand how a platform is shaped, it is
thus necessary to investigate this tension, as it tells us much about the agency of both the platform’s creators and those using it.

*How is the platform itself discursively constructed?*

A platform exists as software, and as data that is shared on that platform—the things people post on or to it. But there are many aspects of a platform that cannot immediately be linked to its software, or to specific data; a platform also exists as something that is discussed in other media, or as a set of social conventions that the people on it adhere to, or as a canvas on which to project expectations and imaginaries. These ‘images’ of a platform are important, because they for a large part are how people see the platform—what they think it may be able to do for them, or for the world; or how they can use it, if they use it. This in turn has implications for how a platform is actually used, and what people post on it, as such images inform people’s choices. Thus an exploration of how a platform is thought of, and how people think they can to a greater or smaller extent control what happens on it, will provide further insight into a platform gives rise to certain forms of expression.

These three sub-questions are each is concerned with a particular part of the process through which platforms take shape, and consequently give shape to people’s expression; and taken together, they comprehensively answer the question of what this process looks like.

### 1.1. Studying the digital

Any historical analysis of internet technologies or platforms should be careful about how it positions itself with regards to the concept of ‘the digital’ (or related and equally vague concepts like ‘new media’ or ‘online’). Clearly this thesis is concerned with digital matters; these social platforms exist on the internet, and are accessed through computers. An important question is thus how we can relate this intuitively ‘virtual’ practice to the broader context of everyday life, and what kind of role such platforms play in it.

Especially in the first few decades following the introduction of the internet, online activity was often seen as being something ‘outside’ everyday life. Susanna Paasonen
discusses this apparent opposition—the digital and everyday life—in her book *Trouble with the Commercial* (2009). Dismissing this dichotomy, Paasonen argues that terms such as ‘internet studies’, which this thesis could ostensibly be said to fall under, are in themselves problematic, as they imply that the internet is a thing to be studied in isolation, separate from existing media history or industry (p.420). Instead, online expression is not more or less virtual than expression elsewhere, and should therefore not be viewed as inherently ‘special’ just because it happens online, which Paasonen describes as the sometimes “oriental” approach researchers can have towards “speculations of cyberspace” (ibid.). Such approaches recall John Perry Barlow’s *A declaration of independence of cyberspace* (1996), a utopian vision of the digital world that, twenty years later, is still exemplary of a pervasive attitude to the digital world as being essentially separate from the offline; a place where different rules apply, where the laws of the old world are no longer valid, and where we can build a new kind of system.

This thesis is positioned on the opposite side of that argument—as will be seen in the following chapters, it is in fact very difficult to precisely demarcate the boundary between online and offline when looking at case studies of how the internet is used socially, to such an extent that the distinction is essentially meaningless and at times counterproductive. The internet is firmly embedded in everyday life, and thus it is part of it, as much as the workplace or the pub, and studying it in isolation or as a separate phenomenon is not very useful. This is worth emphasizing, as it is precisely the interwovenness of online spaces with everyday life that makes them worth studying as I do in this thesis. This rejection of ‘speculations of cyberspace’ suggests a post-digital frame; one where the digital is no longer extraordinary, or a revolution.

Sociologist Nathan Jurgenson argues that “the notion of the offline as real and authentic [as opposed to online] is a recent invention” (2012). “Offline” did not exist as such until there was an “online”; there are no parallels suggesting e.g. the realm of telegraph messages as being distinct from the “real world”¹. Moreover, the distinction

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¹ At least not in such words and in certainly not such a pervasive manner. But the dichotomy is not completely without precedent: the disembodied voice of the telephone exchange's operator inspired many a writer to muse on the “supernatural” qualities of this new method of communication. See for example Kate McLoughlin’s *Interruption Overload* (2013) on the role of the telephone in the work of
between off- and online is mistakenly understood to be a zero-sum game. The view of the internet as “cyberspace”—popularized by William Gibson’s 1984 novel *Neuromancer* and subsequent cyberpunk media—implies that one is either “jacked in” or “jacked out”; there is no in-between (Rey, 2012). This notion no longer holds up (if it ever did) in the face of ubiquitous internet-connected systems and devices, which augment and enrich rather than displace “meatspace”\(^2\).

This rejection of the distinction between on- and offline is not shared universally. Prominently, sociologist Sherry Turkle in her recent work argues that digital, online interaction lacks certain essential qualities that real-life conversation does have. Especially in her 2015 book *Reclaiming Conversation* she points out many ways in which being ‘connected’—through having a smartphone, for example—is detrimental to the ability to feel empathy, have meaningful conversations or form emotional bonds. Online technology “makes us forget what we know about life”, she writes, and makes us lonely. In this view, a chat message can never replace the face-to-face conversation, with all the subtext it conveys through body language and intonation, and a reliance on digital communication can through this deficiency be detrimental to our mental well-being.

Face-to-face conversations are, of course, multimodal in a way that text messages can never be. But as Jurgenson argues in his essay *Fear of Screens*, a critical discussion of the “disconnectionist” view of which Turkle is perhaps the most prominent voice, this difference between face-to-face and internet communication is not inherent to *it being internet-based communication*. Turkle’s lamentation that “we turn to our phones instead of each other” contains the same assumption mentioned earlier, that technology displaces rather than augments the non-digital. The question for Turkle is not how digital connections have changed conversation, but how they have *broken* it. (Jurgenson, 2016) On the other hand, for many, our phones *contain* our friends and family; we do not turn to a dead, impersonal slab of plastic and electronics, but to a

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Ford Madox Ford.

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\(^2\) Per the *Jargon File*, an often tongue-in-cheek reference of hacker lingo: “The physical world, where the meat lives — as opposed to cyberspace. Hackers are actually more willing to use this term than ‘cyberspace’, because it’s not speculative — we already have a running meatspace implementation (the universe).”
device that allows us to communicate with others even though they are not physically present, and the device itself takes a back seat to the presence of the friends and relatives they mediate.

There are solid arguments to be made for communication through online platforms being qualitatively different from communication through other means, and Turkle does point out many of these differences. But this is nothing new or unique; a telegram is qualitatively different from a phone call or a face-to-face conversation. A tweet or Facebook message is unique in some aspects, but so is a post card or court summons. Great care should be taken not to attribute qualities—good or bad—to a method of communication just for the fact that it is received through a digital interface, or to see the digital interface only as a monolithic, opaque black box and not as something through which a wide variety of actions (communicative or not) can be performed, also enabling types of communication that are in many cases rich and rewarding.

The online thus is not qualitatively different from the offline, and in many cases this distinction is meaningless; to study what happens on the internet is to study society, not an isolated subset of it. This rejection of ‘online’ as inherently different may seem to imply that there is no good reason for this thesis to focus on online social platforms. If there is nothing inherently interesting, unique or important about something being an internet technology, surely a comparative analysis of Twitter and an offline platform (the town square soapbox, perhaps) would be as valid and relevant as one of Twitter and another online social platform?

But even though being online does not make a platform special or separate from ‘the offline’, it does make it different in some aspects, e.g. their global reach or their reliance on the availability of modern communications infrastructure. Additionally, even though on some levels there is no reason to see offline and online platforms as fundamentally different, Twitter and the town square are still very different in other ways, such as the role they usually play in someone’s life or the type of people reached through them. As the objective of this thesis is to analyse and compare platforms on a fundamental level, taking a close look at their technical underpinnings and affordances, there has to be some similarity in these aspects to make this analysis feasible. Online social platforms are a particular strain of social platforms, based on
computer technology. They are to be seen apart from other platforms in this aspect, and their underlying technology does give them particular characteristics that are absent in traditional platforms. In this way, the rejection of online as some distinct context makes it all the more relevant to study what happens on online platforms; they are an important aspect of everyday life, in modern times, after all.

Furthermore, digital and online platforms—built upon internet infrastructure, accessed via computers—have displaced traditional platforms to an extent; they have become conduits for large-scale political debates, platforms for investigative journalism, places to meet new friends and lovers; avenues of life that were beholden to other media or technologies before the advent of computer technology. Regardless of whether this is a good or bad development, it does indicate how essential online social platforms have become, and thus how relevant it is to study them—to know how they are developed and develop over time, what function they have for us, and how we can perhaps get a better grip on the process through which these essential tools are developed. And, finally, how they influence what we say and think, at the same time constantly being reconfigured and developed by us.

Hence the relevance of this thesis. We express ourselves through the internet, but not precisely ‘on’ it; the internet is ubiquitous enough that there is no on and off, and to be on the internet is to be alive, for an increasingly large part of the world. We express ourselves through large, integrated online social platforms that we share with hundreds of millions of others. These platforms thus deserve scrutiny, as much as the things that people say on them, as these two are inextricably linked.

1.2. A short outline

In the next chapter (chapter two), I will first describe the methodology of this thesis in more detail. Essentially, the analysis contained within the rest of the thesis is situated within the growing field of platform studies. The next chapter details how I operationalise this approach in this case, what data sources I look at and the ethical ramifications of this. In the chapter following it (chapter three) I build on this framework to explore a number of key concepts—platforms, affordances, protocols &
standards, community and imaginary—in more depth, to make it clear what the concepts underlying the analysis in the chapters following it precisely mean.

The rest of the thesis—the analytical part—can be roughly divided into three sections. The first of these investigates the development of Twitter and IRC, the two platforms I study in this thesis. In chapters four and five, I will first take a closer look at how both Twitter and IRC were initially developed; a review of the processes and dynamics that were at play during the platforms’ formative years. While both platforms are still changing, and plenty of differences could be pointed out between IRC and Twitter as they are now and as they were as little as a year ago, many of their defining features were developed and added during the first few years of their existence. While the emergence of an entity such as Twitter is a continuous and continuing process, as will be detailed in chapter four, the first few years of a platform’s existence are often marked by especially impactful and radical changes. These lay the groundwork for features and structures that will have a lasting impact, in every future development, by the virtue of simply being there and thereby requiring attention. This initial period therefore is particularly interesting. An analysis of it is especially helpful in revealing the dynamic between the platform on the one hand and the wider culture in which it was invented on the other; the techno-political context in which it was created, with the paradigms, possibilities and people that were part of it at the time.

Rather than documenting the full extent of the platforms’ development, which would inevitably be constrained by the space available for it within the context of this thesis, I choose to focus on a smaller number of “particularly enlightening” (Bogost and Montfort, 2011, p.15), important or formative features and developments. For instance, the hashtag, as first used on Twitter, is both an essential cornerstone of the platform and a convention that has found its way to other social media platforms—and indeed beyond. It is therefore especially interesting. Likewise, IRC’s decentralized nature is emblematic of it and one of its essential characteristics, particularly in contrast with the centralized Twitter, and is therefore an aspect of the platform that is likely to reveal important formative influences. My goal in these chapters is to trace the development of these characteristics, and identify the actors and factors that enabled them, to get an impression of what forces are at play in steering a platform’s
development. I do so by reconstructing a timeline of the features' development, aided by primary and secondary contemporary sources such as blog posts, tweets, mailing list archives and newsgroup posts.

In the second section, the focus moves from the platforms themselves to the things people do on those platforms. In chapters six and seven I investigate a number of especially impactful or otherwise representative genres of expression that are particular to the respective platforms. The central question here is why these platforms are, apparently, suitable for those kinds of expression, and what makes them afford these so well that in many cases they are considered the go-to platform for them. The goal here is not so much to enumerate the affordances that are at work on those platforms but rather to unearth the broader factors that contribute to their affording particular genres of expression; the forces behind the affordances, in a way. This touches on the platforms' respective ‘claims to fame’; these are specific instances in which the platforms had particular popular impact, such as Twitter's role in the 'Arab Spring' and 'Green Revolution' and IRC's role in disseminating news about political events such as the 1991 Soviet Coup and the Gulf War, as well as more general trends such as the rise of 'viral' content on Twitter and role-playing on IRC.

Whereas the chapters in the first section started from the very beginning of a platform to trace the development of their various features, these two chapters thus take an inverse perspective; a number of genres of expression are taken as a starting point and from there I ‘work back’ towards the affordances and general factors that enable them. To arrive at these broader insights, I look at tertiary scholarly analyses of these genres, as well as tweets and chat logs themselves, to find connections between these acts of expression and the specific affordances of Twitter and IRC that enable them to be so successful on these platforms. This continues the analysis begun in chapter four and five; whereas those were primarily concerned with the development of the platforms' respective affordances, chapter six and seven focus on how those affordances concretely give rise to specific forms of expression, revealing their agency and thereby the indirect effects of the design influences identified earlier.

Finally, as the final section, in chapter eight I take a step back and look at how people conceptualize Twitter and IRC; what imaginaries exist about these platforms? Even if someone does not use either Twitter or IRC, they will likely have some idea of
what the platform is useful for, based on what they may have read or otherwise heard about the platform, based for example on the more famous ways of using it as described in chapter six and seven. This is the case for Twitter nowadays, and for IRC in the earlier 1990s. This image then informs how they appreciate the platform and things shared on it, and will be a factor in how they use the platform should they choose to start doing so. Additionally, these popular images emphasize certain modes of use, thereby promoting them among people currently using the platforms as well. Thus this image of the platform plays a significant role in how it is appropriated and used; I investigate this through an analysis of popular accounts of the platform.

Part of this imagination of the platform is how those using it imagine their audience; the people that a tweet, or IRC message, is written for and aimed at. There are some remarkable differences between Twitter and IRC in to what extent the audience is visible or even knowable, and in the second part of chapter eight I investigate the impact of these differences on how people use both Twitter and IRC. Both have their own strategies through which people can attempt to articulate and manipulate their audience, and these strategies have repercussions for what types of expression the platforms afford in general. They are, like the genres of expression investigated in chapters six and seven, linked to the platforms' affordances, and thus influence what is and is not done on them; but whereas previous chapters were concerned with what is said on Twitter and IRC, this analysis is perhaps more interested in what is left unsaid; how the people using these platforms negotiate their role and what they consider desirable to say on them, and what agency they themselves have in this regard.

In my conclusion, I recapitulate the various factors and influences identified in previous chapters, arriving at a general impression of the factors that have influenced the various affordances of Twitter and IRC respectively. I enumerate my findings and discuss fields in which the research in this thesis could be furthered.
2. Studying platforms & platform studies

The previous chapter outlined the question I intend to investigate and answer in this thesis. In this chapter I will discuss how similar questions have been addressed by other authors and how I intend to answer it in this thesis. In short, this comes down to a comparative analysis of online social platforms, where each analysis follows a platform studies (Bogost & Montfort 2010) approach. I also discuss alternative approaches that I do not follow, as a way of positioning myself, as well as the materials I intend to investigate and some ethical considerations to consider in doing so.

The main objective of this thesis is to better understand how platforms afford modes of expression that are particular to them; why are we, for instance, likely to share intimate thoughts on the one while on the other we may be mostly using it to share jokes? Platforms here encompasses a constellation of interfaces, people, power relations and networks that together present a delimited space of (and for) discourse (more on the definition of platform in chapter three), but beyond that it is important to remember that the platform is inseparable from the broader context—social, political and technological—in which it exists. In other words, a platform does not just exist as a website or app users interact with, but also as a network of technological entities (infrastructure, hardware and software) and as a network of political influences (platform owners, shareholders, users).

All these aspects of a platform influence each other. Communication platforms never exist in isolation. They are shaped by their context and the various networks of which they are part; and in turn, they shape these networks. As Ulises Mejias described it, communication technology is “neither a neutral tool nor an autonomous agent, [and] humans and technology shape each other” (2001, pp.211-212). That technology shapes humans—or at least what they do—is clear, and that is what makes it worth investigating that technology. This suggests a platform study approach, where one not only looks at how people use the platform but also at the platform itself, and importantly how it was developed and how the choices made there and the platform’s features work through and what people produce on and through it.
By contrast, scholarship on online social platforms or social network sites often limits itself to the contemporary, or to a limited slice of new media history. For example, danah boyd and Nicole Ellison’s influential article Social Network Sites: Definition, History, and Scholarship presents the social network site SixDegrees as “the first recognizable social network site” (2008, p.214). This site was founded in 1997 and is indeed the first site that fits the familiar template of a site on which ‘friends’ can be made and content can be shared; but clearly, it did not suddenly appear in a vacuum, and there are many other platforms and technologies that were an inspiration for SixDegrees. However, such influences have remained largely unexplored, and academic responses to boyd and Ellison’s work often focuses on deficits in their definition of Social Network Site rather than the further history of online platforms (see e.g. Beer, 2008; Thelwall, 2009). While 1997 is a long time ago by new media standards, the history of online social platforms stretches back decades beyond that, and from this perspective 1997 is a relatively arbitrary cut-off point.

Of course, there are good reasons for why boyd and Ellison may have found it necessary to limit their definition of Social Network Sites, if only because it has to be limited somehow. And they make clear that they are specifically studying platforms that “enable users to articulate and make visible their social networks” (boyd and Ellison, 2008, p.212). This is a relatively recent innovation, and a feature of many more modern sites, and thus it serves as a useful boundary for definition and study. But if the goal is to provide an account of the affordances and histories of social platforms in general, as it is here, it is necessary to not just look at these platforms themselves but also the various other entities they are linked to; older platforms, and contemporary platforms that may not fit the SNS definition but can nonetheless be described as social.

Indeed, it is noted that even in the case of the pioneering SixDegrees "each of [its] features existed in some form before [...], of course" (ibid., p.214). However, the process through which these features eventually came together to form what is now familiar as a social network site has not often been the object of scholarly attention. Much of the work on online platforms focuses on content produced through these platforms—e.g. how pictures and videos are shared, or profiles are created—or the
relations between people using them. Studies of platforms as such are also increasingly popular, but much of this work is specifically concerned with specific features such as Twitter’s hashtags (e.g. Huang, Thornton and Efthimidias, 2010) or Facebook’s ‘Like’ button (e.g. Helmond and Gerlitz, 2013). The historical aspect of the overarching ‘genre’ of social platforms remains relatively unexplored.

A growing field of internet and web history does exist, but as Niels Brügger (a pioneer in this area) says, “focus has mainly been on the internet as it looked at the time of the study, whereas the historical developments of the internet in the past has only attracted little attention” (2012, p.106). To be sure, some platform analyses with an historical perspective do exist, such as Michael & Ronda Hauben’s Netizens (1997) on the origins of Usenet, or Katie Hafner and Dan Lyon’s Where Wizards Stay Up Late (1996) on the development of the internet itself. But these are primarily histories; their goal is to tell the story of the platform, not to analyse how that history has shaped the platform and how that subsequently shapes what people do with it.

José van Dijck’s The Culture of Connectivity is one work that is to an extent an attempt at precisely such a study. At first glance it is perhaps very similar in its goals to this thesis: indeed she describes her project as “understanding the coevolution of social media platforms and sociality in the context of a rising culture of connectivity” (2013, p.33). And her methods are similar as well: of the platforms she looks at, she investigates the business models as well as the role of algorithms in their functioning and the ways users interact with the platform. This approach makes for a nuanced, comprehensive overview of some major social media platforms. In her own words:

“[This book is] about the ways in which social media have permeated manifestations of sociality and creativity in the (Western) world over the past decade. [...] When critically examining the history of platforms and the ecosystem through which they evolve, we need to create a functional anatomical instrument, a multi-layered analytical prism that allows us to see more than just a technological platform deployed by users and run by owners.” (p.23)

Of course, social platforms are more than a technological platform. Clearly any analysis which does not pay heed to the “social” in “social platforms” is not complete;
but conversely, the “platform” is worthy of analysis too. Van Dijck’s methods do
certainly take the platform itself into account; but the results are often slanted
towards the descriptive rather than the analytical. For example, she mentions the
introduction of hashtags and retweets on Twitter (p.71), but does not elaborate on
how these features emerged as textual conventions before Twitter chose to officially
adopt and support them, and the nature of this dynamic between the platform and the
people using it, while a study of these processes can reveal much about how these
now-ubiquitous platforms are (co-)created. Likewise, she discusses how Twitter
platform made radical changes to its software and interfaces in 2010 and 2011, but
does not go into much detail on the reasons or context of these changes (p.72).

This is a difference in focus and scope rather than an omission in Van Dijck’s
analysis. *The Culture of Connectivity* is oriented horizontally rather than vertically,
discussing a multitude of aspects of five different platforms. This allows for fruitful
cross-comparisons and interesting generalizations, but by necessity does not allow for
in-depth analyses of particular aspects of these platforms. Yet such an analysis would
have great potential to shed light on many aspects of online social platforms that are
not apparent when one looks primarily at the results of people using these platforms
rather than the underlying infrastructure and software. To understand the modern
debates, genres of expression and self-presentations that fill these social platforms, it
is necessary to understand the tools through which these are achieved; and while it is
possible to learn much about a tool through the artefacts that are produced by it, yet
more can be learned by looking at the tool itself, its maker, and how it compares to
other tools.

### 2.1 Roads not taken: ethnography and digital methods

This thesis is thus, fundamentally, a study of platforms. I investigate two platforms
to analyse how their specificities affect what people do on them. The goal here is to
acquire further insight into how these specificities affect expression and, as an
extension of this, how people deal with those specificities; are they, for instance, acknowledged, addressed, circumvented, or ignored?

With this goal I position myself within a growing body of research that acknowledges the specificities of platforms, and their materiality, as an important factor in the study of online cultures and sociality. Platform studies were first named as such by Bogost and Montfort in 2009 as a label for their work on video game consoles and how their specificity influenced games created for that platform. Since then, the idea of platform studies has been much debated; initially received somewhat sceptically as a method that had merit for video game consoles but not much beyond that, over the past decade increasingly many authors have appropriated the spirit if not the letter of Bogost and Montfort’s approach to study platforms in the broader sense of the word. Crucially, this also includes online social platforms.

However, platform studies is not the default way of investigating this theme, and it is useful here to consider other approaches and why I have chosen to not utilise these in this thesis. There exists a substantial body of work that approaches this theme – sociality on online platforms – from a more ethnography-inspired perspective, for example. In her 2008 dissertation Taina Bucher proposes to study “how software fosters sociality on social networking sites” through what she defines as a “Technography” (p. 69), a “mode of inquiry into the meanings embedded in the mechanics of technology that make use of ethnographic methods” (ibid., emphasis by the author) such as the taking of extensive field notes, participant observation and interviews. Other appropriations of the ethnographic method for the study of online culture include ‘virtual ethnography’, where traditional ethnographic methods are copied more or less wholesale to a digital environment (Hine 2000); ‘digital ethnography’ which emphasizes the utility of digital tools such as network analysis and online surveys in ethnographic research (Murthy 2008) and ‘netnography’ where one uses online search queries to gather data and insights about “sites, topics or people” (Kozinets 2015, p.1). Such approaches vary in the extent to which they make platforms a focus, but what they have in common is that they study online sociality and explicitly make that online context a factor of analysis, positioning it as a site for ethnographic study.
From this ethnographic perspective, Bucher’s approach is the most similar to what I intend to do here as her objectives are, at least at a surface level, comparable to those of this thesis. In both cases there is a focus on the relation between technology – in the form of software – and the modes of social expression afforded by that software. Indeed, her stated goal is to “get at the ways in which technical mechanisms manage, modulate and distribute possibilities for action and interaction on social networking sites” (p. 73-74). However, there are important differences here as well that can help illustrate what the focus of my investigation is and how it compares to the ‘technographical’ method. Bucher here is very much concerned with the actual code of the software she investigates; her method is to “let the software speak” (p.76) to elucidate what is often seen as a black box full of unknowable algorithms, and an attempt at “reverse engineering” these platforms to reveal their inner workings (p.79).

Comparatively, I am less interested in the software itself, and more in the relationship people have with it. ‘People’ here encompasses both the developers of software and those using it (categories that, as will become clear in later chapters, often overlap). Of course, algorithms are a factor in this relationship, as they – especially on Twitter – influence what people see on the platform and what kind of content is presented to them to interact with. Likewise, the precise interface used in interacting with an online platform plays a role in what people can and cannot do with it, and what they are more likely to do.

The difference between my approach and the technographic approach is one of degree rather than concept; while I am very much concerned with the relation between software and what people do with it, the focus of my investigation is less the software on its own and more a combination of the software and the expression produced through this software. In this, it is more similar to Bogost & Montfort’s platform studies approach, which presents an alternative to a method inspired by ethnography yet emphasizes that the platform’s specificities (which in their case were both hardware- and software-based) provides a grounding for a more expansive appraisal of cultural production through that platform, such as video games but more broadly “computational expression” in general. The software that constitutes these
online social platforms thus serves as a grounding for my analysis, and is consequently an important part of it, but not the primary focus as it would be in a technography.

One approach to the study of online sociality that is useful to briefly to discuss here, because it involves a similar mix of factors, is more data-driven, where vast amounts of data are computationally extracted from the platforms to be studied quantitatively in order to find patterns in these datasets that point at particular patterns of expression which can then be analysed qualitatively, to provide insight into cultural or social attitudes. This mode of analysis, which could be said to be part of a broader “computational turn” in the humanities (Berry, 2011), has the advantage of being able to address a much more substantial part of huge platforms like Facebook and Twitter than a quantitative approach could ever hope to be. One influential approach here is that of ‘digital methods’ (Rogers, 2015), in which one looks for “natively digital objects” such as hyperlinks and likes and maps the relations between, producing an overview of activity in a given online space that can then be investigated qualitatively. For instance, one could compare the linking behaviour between platforms, or what kind of actors are dominant for a given issue, which has the potential to reveal how a platform affords a diversity of perspectives, and also how this may be different between platforms.

This digital methods approach, while potentially useful, is problematic here for two reasons. One is practical: while Twitter has a relatively well-documented API and has given rise to a host of analytical tools a researcher could use (see e.g. Rieder and Borra, 2012), IRC has no such central data repository that can be trawled for data, and its relative obscurity means no software or central data repositories exist that could allow for a similar approach on that platform. There is thus no hope of ‘scraping’ IRC like one would scrape Twitter. IRC’s equivalent of a tweet-based data set would be a collection of transcripts of chats – chat logs – but these were typically not publicly archived for later use. A study of IRC therefore has to base itself on what fragments of logs there are in addition to a large body of contextual information such as mailing list discussions, net zines or news groups. While these could be scraped individually, the necessity of combining these fragments (which come in a large variety of mutually incompatible formats) in the process of reconstructing what in fact happened in the
early 1990s precludes a data-driven approach that can cover both platforms I intend to investigate.

The other issue is more conceptual. Due to the fact that the platforms come from different eras, there is a similar gap between the types of “digitally native objects” (Rogers 2015) one may find on either platform. Whereas Twitter has hashtags, follows and likes, IRC has channels, queries and user modes; many of these have no direct equivalent on the other platform which would further make a data-driven comparative analysis infeasible. A comparative analysis, as I will discuss in more detail in the next section, has to compare objects that are not too similar and not too dissimilar. But that ‘similarity’ here of course depends on the aspects of the object one looks at; a London phone booth is similar in colour to the planet Mars, but the pair would make for a remarkably unsatisfying comparative analysis if one is interested in long-term terraforming prospects. Likewise, a data-oriented approach would foreground precisely those aspects of these platforms that are particularly divergent, and therefore difficult to reconcile in pursuit of a generalized understanding of platform-specificity in online expression.

2.2. Platform studies as a methodological framework

My approach is therefore primarily qualitative. In this I follow the Platform Studies method as proposed by Ian Bogost and Nick Montfort, as originally set forth in Racing the Beam, their analysis of the Atari 2600 video game console. Bogost and Montfort’s method emphasizes that in order to fully grasp the significance of a computer platform, and the significance of what is produced through it, one needs to thoroughly investigate and analyse the platform in all its particulars—“the relationships between the hardware and software design of computing systems (...) and the creative works produced on those systems” (2009a, p.5). In the foreword of Codename Revolution, another issue in the Platform Studies series that focuses on the Nintendo Wii platform, the philosophy is further succinctly summarized in three key points, as incorporating:
• A focus on a single platform or a closely related family of platforms

• Technical rigor and an in-depth investigation of how computing technologies work

• An awareness and discussion of how computing platforms exist in a context of culture and society, being developed based on cultural concepts and then contributing to culture in a variety of ways—for instance, by affecting how people perceive computing (Jones and Thiruvathukal, 2012)

The third point is perhaps the most important in the context of this thesis, emphasizing the formative context of the platform. A second defining feature is the emphasis on studying a small amount of platforms (or a single platform) in depth, rather than a broad look at cultural artefacts of the same genre. Another way to put it would perhaps be to call platform studies a vertical method, focusing on a limited set of closely related artefacts in order to be able to study them in all their detail, rather than a horizontal method, in which (for example) many platforms from a particular period in time are studied and compared, but inevitably in a less exhaustive manner.

More generally platform studies can be said to again be a specifically material approach to the study of new media, in opposition to the “intangible concepts and metaphors” that are sometimes used to describe these new structures and phenomena (Helmond, 2015, p.17). In this it is related to software studies, an approach that similarly emphasises the importance of looking at the code underlying new media practices, but with the difference that platform studies argues for “a strong separation of code and platform” (Apperly and Jayemane 2012, p.11). Thomas Apperly and Darshana Jayemane argue that as a project the digitally material approach is essentially a re-aligned variant of software studies “focused on thinking through the relation between the computer and cultural layers by examining how the material computational limits of the platform shape and influence design decisions” (ibid.) ‘Material’ here thus not only refers to the physical constraints such as processing power or screen resolution, but to the more general worldly influences that have the power to shape a platform and, thus, ‘influence design decisions’. This embeds
platform studies in a wider ‘material turn’ in media studies, in which techno-cultural context is emphasized as a factor, and which sees media platforms and interfaces as “practical instantiation[s] of theoretical ideas” (Leonardi 2010).

The work of Bogost and Montfort, and Jones and Thiruvathukal, clearly shows how useful the platform studies approach can be when investigating video game platforms, as a method of identifying and reconstructing the influences that made these platforms what they are, and enabled them to do the things they did. But does it hold equal value when trying to investigate the nature and impact of social platforms? While authors such as Anne Helmond (2015) have successfully adopted parts of it for their work, Bogost and Montfort’s approach has so far found limited adoption beyond game studies. This is perhaps in part because of a number of differences between social media and video games that could potentially hinder a cross-over of the method. For instance, game consoles are particularly defined by their hardware, and require more financial investment, which make them much more mutually exclusive than social platforms. While there is nothing fundamentally hardware-based about game studies, the fact that the platform studies approach has heretofore been primarily used for such studies has perhaps not helped its image as a general-purpose method.

Helpfully, Bogost and Monfort address this precise concern—the idea that “platform studies is all about video games”—and note that this is (at least theoretically) not the case: “platform studies extends to all computing platforms on which interesting creative work has been done” (Bogost and Montfort, 2009b, p.1) because “platforms are pervasive in all sorts of computing”; the common characteristic is that they “support digital art, hypertext, interactive fiction, chatterbots, recreational programs that aren’t standard games, and other sorts of new media production” (ibid., 3). This is certainly the case for online social platforms, which continue to increase the types of content they allow people to share on them, and offer various types of hypertextual content, often supported by all kinds of chat bots. And while social platforms are typically more hardware-agnostic3 than video game platforms, as it is in

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3 A term from software design that indicates software designed to run on many different platforms; while video games often run only on one type of console, other software may be designed to run on for example the Windows, Linux and Apple operating systems.
their interest to be available on as many devices as possible, the fact remains that there are still hardware-based constraints in play. At all times, there are considerations related to bandwidth between the server and the user, storage space on the part of the platform owner, or what the least powerful device at which an application or website should be able to run smoothly should be; and any interface is in the end constrained by the device on which it runs.

Coupled with the fact that in some aspects the software has the same kind of limiting influence as the hardware, e.g. in the case of what a web browser or mobile operating system is capable of, and what interactional affordances an interface offers, a platform studies-esque in-depth investigation of an online social platform should not be constrained by the differences between video game consoles and social platforms. On the contrary, both are computational platforms that can be the object of such an analysis.

More specifically, one may wonder what to focus on, if the goal of a platform study is to study a platform in all its particulars (of which there will surely be many). Here too I follow Bogost and Montfort who for their analysis of the VCS video game console “selected [...] six cartridges from the many hundreds that have been developed because they particularly enlighten the discussion of the VCS platform and creative production upon it” (2011, p.15); likewise, I focus on instances of use of Twitter and IRC that are especially illustrative when it comes to their respective platforms, the genres of expression afforded by them, and how the people producing those expressions relate to them.

How to define ‘particularly enlightening’ in this context? Bogost and Montfort do not discuss an overall method for their selection, only their motivations for individual case studies chosen, which indicate that their examples were significant historically (one of the first games released for the console, and one of the first third-party games), groundbreaking (representing a genre not seen before), or particularly successful (economically or critically) (ibid., p.15-16). Generally speaking, an analysis of this kind will always be limited in how much ground it covers; for each aspect of the platform covered there will be others that are left unmentioned. However, the goal is for the aspects that are discussed to offer a representative impression of the varied
and nuanced ways in which a platform can be used. To that end, I am similarly interested in instances of expression that are either significant historically as a first instance of a common mode of use (as in the case of drive-by harassment or casual cybersex on IRC) or offer a particularly potent window on the specificities of a platform (such as community formation on either IRC on Twitter). I will return to this point at the end of the chapter to more concretely outline the ‘particularly enlightening’ case studies to be investigated in the next chapters.

2.3. Comparing and integrating platform studies

Online social platforms are thus suitable for a platform studies-esque approach, with small adjustments. With Bogost and Montfort’s approach in mind, this comprises special attention to a platforms’ constraints and their direct and indirect effects; a focus on a small number of platforms; and an acute awareness of societal and cultural context in which these platforms emerge, and the interplay between this context and the platform’s affordances.

But if a number of platforms are studied via this paradigm, the question remains how the analyses of the platforms individually, with their individual constraints and context, will be reconciled to give way to a more comprehensive understanding of such platforms as a whole. Essentially, the goal here is a comparative analysis of platforms, analysing both in tandem and cross-comparing results to find meaningful differences and similarities. In the words of Benedict Anderson, a comparative analysis is “not a method or even an academic technique; rather, it is a discursive strategy” (2016). There is no firm outline of what is or is not a comparative analysis; instead, it is perhaps more useful to think of it as two online social platform case studies of which the findings are then thoroughly compared in order to find truths that hold for both platforms or ultimately the greater category of such platforms in general.

Anderson outlines a number of questions to keep in mind when doing such an analysis: is the goal to find similarities or differences? Is there a potential for ‘surprising results’, e.g. is there new ground to cover (ibid.)? A comparison between Facebook and Twitter might be interesting on a number of levels, but in the end the
two are in many ways similar, both having emerged around the same time within a comparatively identical techno-cultural context. While a comparative analysis of the two might lead to insights about those two specific platforms, they are ultimately too much of one kind—in terms of ownership, software, technological context and ecosystem—for such an analysis to allow for conclusions about online social platforms as a more general category. But if two platforms with greater differences are chosen—say, Netflix and eBay—the differences will make a reconciliation of insights more difficult yet potentially also more rewarding, as this will require elevating them to a more general and abstract level where a comparative analysis of them have the potential to say much about online social platforms in general; the result, as they say will be greater than the sum of its parts.

As for the Anderson’s second question—is there new ground to cover?—the platform studies method does allow this study to cover new ground. A platform-oriented approach would offer a fresh perspective on the role these platforms play and how they play that role, and the particular platform studies focus would be a way to take a look at historical material about these platforms that has not yet been closely scrutinized. It then again becomes important to make sure that the comparative analysis compares platforms that, when compared, have the potential to yield useful insights about the nature of online social platforms and how we interact with them.

Given these considerations, it seems proper to compare platforms that are different rather than similar; there will be a greater range of activities and design considerations to compare, and if after an exhaustive analysis some factors seem to apply in general, that would in turn allow conclusions to be drawn about online social platforms in general.

There is, of course, the matter of scope. The more comprehensive an analysis of a platform aims to be, the more ground it needs to cover. To keep this thesis at a manageable size I have therefore chosen to limit myself to an investigation of two online social platforms in detail. By necessity, many other platforms will be mentioned, some more briefly than others, to properly contextualize this discussion; indeed, by the very nature of the methods employed it is necessary to look at the context of a platform, a context that also includes other contemporary or preceding platforms that
may have influenced or been influenced by the platform in question. But ultimately the focus will be on two platforms, allowing for an in-depth analysis of both.

Another issue here is the sheer size of these platforms. Two billion people regularly use Facebook, as of 2017; Twitter claims over 300 million accounts; and even older platforms like IRC or ICQ had hundreds of thousands of people on them. This makes it exceedingly difficult to isolate representative samples of usage of these platforms; typical genres of expression may be different based on language, age, cultural background, or a myriad of other factors, all of which exist in a large variety. Furthermore, some of this content is precluded because of linguistic barriers or lack of access, for example to content posted in private groups.

It however remains important to look at the content produced and shared through these social platforms, if only because it is impossible to study the platform’s features and affordances without incorporating that what is produced through it. Following Bogost and Montfort’s approach, I therefore choose to focus on a non-exhaustive and perhaps somewhat arbitrary set of examples of expression that do, however, share the quality of having had impact in one way or another; by effecting change outside of their immediate social platform context (as in e.g. Twitter’s role in the Arab Spring) or going beyond a platform’s typical usage (e.g. the appropriation of IRC as a place to stage theatre plays). Other samples are distinguished by originating from especially amplified voices; people who regularly have a large impact by virtue of their huge following or audience. Even if these case studies together do not represent the full gamut of expression online platforms offer, they still present a rich set of examples that allow identifying more general conclusions about trends and processes across online social platforms in general.

2.3.1. Objects of study: archives and sources

As I am concerned not only with the materiality of the platforms at hand but also with how that materiality was shaped and developed, my analysis will for a large part be historically inclined; the platforms I study have existed for over a decade, and . As the shaping of a social platforms is inevitably part of a larger history of online platforms, much of the work in this thesis will be based on older digital sources;
newsgroup messages, mailing list archives, net zines, blogs and forum posts. A complicating factor is that sources of this kind are fragmentary; much of what happened online has not been archived, or is not publicly available, or not findable through search engines (Brügger 2012, p.109). I am thus reliant on materials that have been archived. To an extent, this requires me to go where the evidence takes me; I can only analyse those online social platforms and practices that have left a record.

I am here between what Niels Brügger distinguishes as “internet history” on one hand and “web history” on the other (2012, p.106-107). My focus is on the history of online platforms; some platforms (such as Twitter) are web-based, and a history of the platform is therefore to a large extent confined to the web. Other platforms (such as IRC) exist on the internet but outside the web, and traditional web history tools and techniques such as web scraping and the Wayback Machine are only of limited use. This need not necessarily be a problem; the sources that are accessible are often available precisely because they document particularly important or impactful episodes in a platform’s history, and are therefore the sources that would be most immediately interesting (‘particularly enlightening’) in this context anyhow. For example, relatively few transcripts of chat activity on IRC in the early nineties are available; but those that are available transcribe the moments in which IRC covered important news events, which emphasized the platform’s relevance at the time.

Similarly, much that has been written about Twitter’s development is found in blog posts; but because those blog posts have been linked to occasionally over the years as relevant witness reports of the platform’s creation, and because they often link to each other, they are still available via web archiving services and discoverable by following the trails of links that originate in news articles and blog posts referencing these older documents.

This distributed, fragmentary, but highly relevant set of documents forms one part of my material. In addition to this, I use a relatively distributed and not necessarily interconnected set of sources, such as news articles in technology press announcing product updates, and release notes that were distributed with software or announced on the platform owner’s blog. Furthermore, and in a more general sense, I use several

\[\text{\footnotesize \textsuperscript{4} See Appendix A for more information on the transcripts consulted for this thesis.}\]
more organized archives and tools in this research to uncover this historical aspect of online social platforms\(^5\), of which these are the most important ones:

- Henry Spencer’s UTZOO NetNews archive, a collection of archived Usenet posts between 1981 and 1991 that was collected by Henry Spencer of the University of Toronto and is available through the Internet Archive. This is the most complete archive of Usenet posts from this era that is still available. As Usenet was, especially in this period, the most prominent social platform, this provides an unmatched insight into the attitudes and interests of the people using the internet at the time.

- Ibiblio’s IRC archives, which include chat logs that provide transcripts of IRC’s coverage of major political events in the early 1990s, as well as archived conversations on a number of mailing lists that were used to coordinate the development of the platform. This is a relatively disorganized set of files and there is no clear rationale explaining why it contains these sources and not others. However, the material that is contained within is perhaps the most complete archive of early-1990s IRC.

- Google Groups, a discussion platform that includes—among other things—archives of Usenet posts from the 1990s until 2001. It also incorporates parts of the UTZOO archive, but as its search functionality is limited, Google Groups is mostly useful for the later Usenet posts it includes. This covers, among other things, the period in which IRC was actively developed, and includes many discussions about IRC etiquette, features, and more general discussions about the platform.

- The Internet Archive’s Wayback Machine. This is a tool rather than an archive. But as Twitter—the other platform I study—is largely web-based, the Wayback Machine is the only way to see what earlier versions of the platform looked like, since no copies of the website are archived by the platform itself or in any other place. Through the Wayback Machine, it becomes possible to see older versions of the platform and its interface. While tweets and Twitter’s blog posts are still available on the platform, the Wayback Machine is the only way through which these can be appreciated in (an approximation of) their original context.

\(^5\) See Appendix A for a more detailed and quantified overview of the data sources used in this thesis.
2.4. Ethics

I will throughout this thesis cite many tweets, e-mails, chat logs and Usenet posts. These quotes retain the spelling and grammar of the originals. I thus cite them unchanged from the original texts. This raises the question of whether, and to what extent, content from these sources should be anonymized. Mailing lists and newsgroups were explicitly public platforms; and that they could be archived and available for later consumption was general knowledge. Archived versions of such content usually include the author’s full name and e-mail address, and many people choose to include a signature containing further personal information (such as their place of work or study) as well. There are two questions here that need to be asked then; should data be anonymised, and should informed consent be obtained from these authors before using their data in research?

I am mindful here of the wider context of this research. The research this thesis is based on was undertaken as part of the Ego-Media project, and interdisciplinary project at King’s College London that aims to investigate the “impact of new media on forms & practices of self-presentation” (Saunders, 2013). Given this object of research, multiple projects within this greater frame have dealt with the question of how to handle what is essentially someone’s personal writing, shared online, that has now been transformed into something to be analysed by a researcher. Complicating matters here is that, as an interdisciplinary project, different disciplines have different perspectives on anonymisation and the handling of personal data. The Ego-Media ethical perspective is primarily informed by best practices in the field of sociolinguistics (Georgakopoulou, 2013, p.11). In this field, as in others (see e.g. Ess et al., 2002), the question of to what extent and when to anonymise online data and inform people is an on-going discussion. On the topic of informed consent, Alexandra Georgakopoulou notes that “the consensus that seems to be emerging is that informed consent [...] is neither practical nor feasible” and that in the case of social media “if the data are treated as textual data [...] researchers treat the data as ‘public domain’ data that do not require informed consent to be used for research purposes” (ibid.). The data I use in this thesis are certainly public, and may be obtained by anyone with access to the internet and a relevant list of search queries (see Appendix A for an overview of the
data I use in the rest of this thesis). I will therefore not seek informed consent for the use of data in this thesis.

This leaves the question of to what extent content can and should be anonymised or pseudonymised. The general rule of thumb for the Ego-Media project was that “the greater the public-ness of the venue, the less obligation there may be to protect individual privacy, confidentiality, right to informed consent, etc.” (p.12). In the project ethics statement Alexandra Georgakopoulou, further underlines that on many modern networks people are informed that their content is publicly available and may be read and downloaded by others; indeed, Twitter’s terms of service as early as 2007 note that any data submitted to the platform will be “displayed to people in the Twitter network” (n.p.), and later versions starting in 2010 warn people to “only provide Content that you are comfortable sharing with others” (n.p.), further cautioning that “what you say on Twitter may be viewed all around the world instantly. You are what you Tweet!” (n.p.)

This is, however, not the case for IRC, on which terms of service were not widely used. Furthermore, as Martin Sveningson Elm notes, “even if users are aware of being observed by others they do not consider the possibility that their actions and interactions may be documented and analyzed in detail at a later occasion” (2009, p.77). From this perspective, it would be ethically prudent to anonymize such sources, as it is likely that even if they were ‘public’ at the time, that was not necessarily understood to include the type of academic analysis this thesis contains. On the other hand, at least in the case of IRC mailing lists, people were acutely aware that their contributions were saved for later usage of indeterminate kind. Guillaume Latzko-Toth, whose study of IRC’s development dealt with similar sources as this thesis, argues that these archives were seen as “institutional memory,” and that generally people seem to have been aware of the possibility of later usage of these public archives (2010, p.132). Indeed, when signing up for a mailing list, one is generally made aware of the location and availability of any archives, which unambiguously makes clear that such an ‘institutional memory’ exists and may be perused by others.

It is however impossible to make sure that all participants in such mailing lists were indeed aware of this, whether all mailing lists did indeed send such a notice, and
whether people actually read it and understood its implications. In the case of Usenet, this is complicated further; while that platform may be more public by nature, as it does not require a subscription like a mailing list does, they are simultaneously less explicit about exactly how public they are. This can, of course, be inferred by people using the platform, but this bring us again to Sveningson Elm’s observations that people do not necessarily consider the future implications of such public availability.

Sveningson Elm however also emphasizes that public/private is only one axis along which to consider sources; another one, similarly important, is the balance between sensitive and not sensitive (p.80). This aspect is also emphasized by the Association of Internet Researchers (AoIR)’s 2002 report on ethics in internet research, which (among other recommendations) notes that an important question is “what ethically significant risks does the research entail for the subject(s)” (Ess, 2002, p.7). This question is not easy to answer in general terms, but on balance it is unlikely that my quoting of the conversations and messages I use in this research will create ethically significant risks for their authors. Many are primarily discussions on platform development, and are mostly concerned with which features to (not) include in software; in any case, these messages are here of interest because they are historical documents, describing some kind of feature of the platform. In other words, they are mostly about the platforms, rather than the people who wrote them, and are thus unlikely to implicate their authors in one way or another.

Of further relevance is the fact that, due to the thoroughness of modern search engines, any quotes uttered or transcribed online can be traced back to their origins with ease, even if steps are taken to anonymize them. The effectiveness of anonymizing names is thus potentially quite limited. More thorough anonymization would likely also be ineffective; even when special care is taken to remove identifying information from data, it is often possible to trace it to its origins through its metadata or comparison with related sources (see e.g. Zimmer, 2008; Zimmer, 2009; Okuno, et al., 2011). However, there is still a barrier to access here if all one has to go by is a message’s contents, where one needs to know what to search for and with what search engine, and at least in the European Union people have the right to invoke the “right to be forgotten” (see e.g. Rosen 2011) if they have cause to desire data to be removed from search results.
Pseudonymisation of usernames and other obviously personal details therefore strikes a proper balance between anonymising users while still acknowledging the ‘public-ness’ of their messages as a justification for using them verbatim as part of this research. In this I again follow the wider Ego-Media guidelines, to “anonymize/pseudonymize all data as far as is possible and practicable” while acknowledging that in some cases “anonymization is neither feasible nor possible” (2013, p.12). I will thus anonymise the messages I cite, pseudonymising or omitting author names where possible, except for certain cases the identity of these authors is in fact relevant, as some of the participants in discussions about the earliest online platforms were or would become significant figures in the development of the internet, and can therefore be considered public figures (or “celebrities”; ibid.) in this context.

2.5. In the field—objects and methods of platform study

As discussed before, for a comparative analysis, a careful choice of platforms to analyse is crucial. And if only two platforms are studied, as is the case for this thesis, the choice of platforms is all the more important; two platforms that are too similar will result in conclusions that say much about these platforms in particular, but little about platforms in general. On the other hand, the platforms should be similar enough that a comparative analysis is not comparing apples and oranges; there should be some overlap in characteristics that allow generalizing eventual conclusions to a more abstract concept of ‘online social platforms’.

Given the intent to analyse and understand the historical context of these platforms, the characteristics on which the choice of platforms is based should reflect this context as well as possible. As such, it is important to not just consider characteristics like the number of people that use a platform or the kind of devices through which it is accessed, features that distinguish some contemporary platforms from each other but on their own present only superficial differences. In the earlier discussion on the platform studies method, it was clear that the broader techno- and
socio-cultural context in which a platform emerges is important as well, as this is potentially a great influence on its development.

Another aspect to consider is the kind of content that can be shared through a platform and how it is organized. Facebook, for example, organizes content through user pages, group pages, apps, photo albums, and several other types of interface. In comparison, Twitter is relatively simple; virtually anything can be accessed through its primary interface, the ‘feed’. Such a platform with a limited number of interfaces or views through which content is accessed is more suitable to this thesis, as the intent is to analyse a platform generally and not just part of it, and a platform like Facebook that has large differences between contexts within the platform would both require more space to be analysed properly and would be hard to compare with other platforms, since it could be said to in fact be a collection of platforms rather than a singular one.

All in all, a number of key factors can be used to determine which platforms would be useful to look at more closely, being suitable for a comparative analysis. Such factors include:

Ownership: who owns the platform? What kind of ownership structure is there, if any? This is a major factor in who can and who cannot have direct influence on the platform’s design; centrally owned platforms are principally designed by their owner, while decentralized or open source platforms may be worked on by a wider variety of people. Ownership structure thus indirectly influences much of the further design and development of a platform.

Technology: what kind of technology does the platform use? What kind of technology do users need to access the platform? Both hardware- and software-based limitations and possibilities have an impact here, and ‘technology’ thus includes both. Technology is an obvious influence on a platform’s design, as features may or may not be feasible depending on the state of internet and computing technology at the time they are invented.

Scope: does the platform have a particular niche for which it is used or is it used for more general purposes? Is it divided into separate sub-divisions or not? Is it similar to
other platforms in terms of what gets discussed and by whom? Some platforms such as Slack or LinkedIn are primarily aimed at professional use; others are more general-purpose or focus on subcultural niches such as video game enthusiasts. Such ‘target audiences’ have implications for how the platform is designed and marketed, as different audiences may have different requirements or constraints.

Access: what are the boundaries to access? Can anyone use the platform? Is it private, or subscription-based? Access and purpose are major influences on a platform’s features, as public platforms may require extra attention for issues like privacy. Most online social platforms are free to use; but there may be less clear-cut boundaries to access, such as requiring some amount of computer expertise to properly use the platform or being restricted to a particular operating system.

Age: how old is the platform? When was it created? Contemporary platforms will be similar in many aspects, especially regarding cultural and technological context, while platforms that are further apart temporally will have been designed with different circumstances informing their design. The age in itself is of limited importance, but the fact that the time in which a platform was created works through in virtually every aspect cannot be ignored.

Content: what kind of content can people share on the platform? More complex or versatile the content will require a more expansive analysis. Modern platforms can potentially support a wide variety of content, but platforms with divergent types of content can be hard to compare in a productive way due to the different purposes they are consequently used for.

A summary of these features for the two platforms of choice—IRC and Twitter—follows:

<table>
<thead>
<tr>
<th>Platform</th>
<th>IRC</th>
<th>Twitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>No owner in particular: anyone can set up a server or create software, though development of the IRC standard has traditionally been led by a loosely affiliated consortium of volunteers.</td>
<td>Wholly owned by Twitter, Inc. which is a publicly-traded company.</td>
</tr>
<tr>
<td>Technology</td>
<td>IRC is a protocol, freely implementable by anyone. No ‘first-party’ clients exist for lack of a first party, and third-party clients and servers are free to connect as long as they follow the protocol. Built on top of TCP—the basic internet protocol—and software is available for many platforms.</td>
<td>A proprietary web-based platform accessible through clients released by the platform owner. Limited third-party access is possible via APIs but controlled by Twitter. Clients are available for most popular platforms and devices.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Scope</td>
<td>‘Chat room’ in the broadest sense of the word, for discussions about any topic and also other purposes such as role-playing.</td>
<td>‘Microblogging’ platform used for many purposes (blogging, news feeds, PR, et cetera). Originally built for personal ‘status updates’ but typical usage has grown beyond that.</td>
</tr>
<tr>
<td>Access</td>
<td>Connecting requires a client. Clients are available for many platforms and usually free. Individual networks may be protected by e.g. passwords, but most networks are open. Access controlled per network by their owners; users can set up their own networks.</td>
<td>Service freely accessible through website or apps; submitting content or using other features requires an account which in turn requires a valid e-mail address. Access is controlled by Twitter, and accounts are sometimes terminated or suspended by them.</td>
</tr>
<tr>
<td>Age</td>
<td>IRC was created in 1988; development is slow but not stagnant, and a volunteer working group is currently the de facto developer of the standard.</td>
<td>Twitter was founded in 2006, and is still under active development, under the continued ownership of Twitter, Inc.</td>
</tr>
<tr>
<td>Content</td>
<td>Text-only; some clients may support various types of mark-up and hyperlinks, but in principle conversations consist of an exchange of plain text messages.</td>
<td>‘Tweets’, initially short text-messages only; later messages allow attaching longer content such as pictures, video, links or text, but a character limit is still in place, though it was increased from 140 to 280 in 2017.</td>
</tr>
</tbody>
</table>

Clearly, in many aspects Twitter and IRC are very different kinds of platforms. The main difference, which many if not most other differences could perhaps even be said to be a result of, is that Twitter is a proprietary platform owned by a company, while
IRC is a free protocol owned by no one. Accordingly, Twitter’s access and feature set is tightly controlled by Twitter, Inc. while IRC can by design not be controlled (as there is no central server that someone can own) and thus has a different set of forces that would influence its features. Additionally, as both are from different eras, the technocultural context is very different with predictable repercussions; whereas Twitter rode the early-2000s 'Web 2.0' wave of increasing internet ubiquity and an emerging smartphone market, IRC was created when online access was still largely limited to research institutes and governments and low-resolution, text-based monochrome screens were the norm.

Thus evidently there are enough differences to make this a comparative analysis that can potentially yield some useful insights. But are the differences perhaps too great? After all, IRC is fundamentally different from Twitter in multiple crucial aspects. Twitter, as a company, not only decides on the platform’s features but also develops its client software and decides on policies such as what types of content are allowed on the platform. IRC, on the other hand, can be accessed through multiple, sometimes radically different clients, and can be characterised as a federation of servers that can set their own rules and to an extent even add or remove features from their instances of the platform. Furthermore, the mode of communication—IRC’s synchronous text-based chat versus Twitter’s tweet-based microblogging—is also likely to have repercussions in what the platforms afford and how they have developed these affordances. Yet for all their differences, what the platforms do have in common is that they are used to communicate online, sharing the underlying platform of the internet and—as I will explore in more detail in later chapters—being used for similar types of expression. They do, additionally, both offer answers to the research questions of this thesis. Recall the research questions as described in this thesis’ introduction:

- How does the technology on which a platform is based shape the affordances of the platform with regards to self-presentation?
- What are the roles of 1) the platform’s creators and 2) the people using it in determining what the platform is used for?
- How is a platform discursively constructed?
It is reasonable to expect the answers to these questions to be different depending on whether they are answered for Twitter or for IRC, given their different natures. But crucially they can still be answered for both platforms. Both are fundamentally based on a project of finding new ways for people to communicate on the internet; and indeed the technology underlying both is the internet, and it is thus possible to look at both to investigate the shaping of affordances through the underlying platform. The internet from 1989 is only partly the same as the internet of 2006, to be sure; but it is fundamentally the same technology, and the differences are precisely the factors this thesis aims to analyse. Similarly, even if the roles of platform creators and the people using it are different between Twitter and IRC, they still matter on both; as does the wider discourse about and surrounding a platform. It should, therefore, be possible to comprehensively answer the research questions for both platforms, and through a thorough comparative analysis of these findings then attempt to draw a more general conclusion about online social platforms as an overarching category as well.

This thesis is thus set up as a comparative analysis of platform studies. Two platforms, IRC and Twitter, will be studied in detail, though not exhaustively; the goal is to analyse a number of case studies of genres, images, features and affordances that together provide generalizable insights that contribute to a greater understanding of the process through which a platform’s affordances take shape and how they are then a factor in shaping expression on that platform. In this I will investigate these platforms along two major axes; one historical, with an eye for the various ways in which the platform has been used through time and how it has developed based on its historical context; and one oriented on examples of usage of these platforms that “particularly enlighten the [platform] and creative production upon it” (Bogost & Montfort, 2011, p.15). in the following chapter I will explore in more detail the existing scholarship on a few of the concepts that underlie this platform study, and form the theoretical lens through which I will study them.
3. The fabric of an online social platform

In the previous chapter, I offered an overview of how one may operationalise a study of this kind. In this chapter, I want to discuss a number of concepts that will be central to that study in more detail, to make it clear how I understand these platforms and what happens on them and how I relate that to existing writing on these concepts. Terms like ‘platform’ and ‘affordance’ are notoriously versatile, and it is thus crucial to clearly define them if they are to serve as a foundation for this research. I will therefore next discuss five concepts in detail, both to make their meaning clear and to position this research within the existing body of work on online platforms:

Platforms—both IRC and Twitter are online social platforms, but the word ‘platform’ can mean many things and it is not always clear where one begins and ends. I am informed by my chosen method here, using Bogost & Montfort (2011)’s definition of a platform as a computational system as a starting point here, but I interpret it in a somewhat broader sense than they do, inspired by the work of van Dijck (2013)’s and Gillespie’s (2010) writing on the topic. I further discuss how one may demarcate a platform following that definition, and how it relates to the idea of a social network site. This is perhaps the most central concept to my thesis, as platforms are my object of investigation, and therefore this section is somewhat longer than those that follow and in which I discuss further concepts relevant to my subsequent analysis.

Affordances—when talking about user interaction and interfaces, mentioning affordances is unavoidable; but the word has taken on many meanings since its inception and definitions sometimes contradict each other, making it necessary to explicitly position myself with regards to what interpretation of the concept I use. I am chiefly informed here by William Gaver (1991)’s notion of technology affordances, as a way of making visible how the affordances of a technology inform how people interact with it, and how that informs the technology.

Protocols and standards – I have already mentioned on a couple of occasions that protocols and standards play a role in the formation of platforms. Here I will discuss the existing scholarship on this in the context of online platforms so to better contextualise my own investigation and offer some grounding for my subsequent
analysis, where especially in chapters 4 and 5 I will take a closer look at the protocols and standards underlying Twitter and IRC; how they were created; and how they offer ways of understanding what people do with and on those platforms.

*Community* – Community is a theme I will discuss especially, and most explicitly, in chapter 7, as something that may emerge from people interacting on an online platform. But more generally, community is a theme underlying the subsequent chapters, and in this section I discuss how the *Sense of Community* model (McMillan and Chavis, 1986) provides a good frame through which to understand the formation and existence of community in this online context.

*Imaginary* – This too is a theme that is explored in more detail in a later chapter – chapter 7 – but that simultaneously serves as a grounding for the rest of my analysis. Implicit in my platform study is the argument that people have a certain conception of the platforms they use, and that this conception, an imaginary, informs their attitudes to and usage of these platforms. The concept of ‘imaginary’ however comes with significant baggage, and in this section, informed by the work of Gershon (2010) I discuss how the term has been used in a new media context up until now, and how the concept of ‘media imaginaries’ provides a useful addition to the platform studies framework employed here.

### 3.1. Platforms

Before even trying to define the term ‘online social platform’ that is central to this thesis, another question must be answered: what is a platform? The word can mean many things, from the proverbial soapbox to a more abstract context of any kind of discourse. As Tarleton Gillespie notes, “The Oxford English Dictionary notes 15 different uses [of the word]”. Gillespie divides these meanings in four broad categories, but argues that none of these adequately fits the word as used for “digital media intermediaries” (2010, p.349). Rather, such digital platforms represents all four Gillespie’s categories at once: they are platforms in the computational, architectural, figurative and political senses of the word. These four categories then are not mutually exclusive, and rather represent different ways of looking at a platform, each
highlighting particular characteristics and challenges. To this one may add other perspectives too, for example platforms as a “multi-sided market” (Rochet and Tirole, 2013), a space where third parties may exchange values, through selling advertisements or operating a marketplace.

This multidimensional understanding makes it hard to discuss a platform as a singular entity; if it is so many things, where to even start trying to make sense of it? José van Dijck proposes that “platforms aren’t things; they allow things to happen” (2013, p.180); the term thus encompasses many separate things that together form a context for people to express themselves and interact. Nancy Baym likewise points out that many think of digital platforms as “spaces” and “shared places” (2010, pp.75-76), a perspective that has also found currency in popular media, with internet and similar concepts being envisioned as a ‘cyberspace’ that can be accessed if one has the right tools. This notion of a platform as a shared space is echoed in the concept of ‘online safe spaces’ where rules or guidelines are put in place to allow people to partake in discussion without the fear for harassment (see e.g. Hall 1996 for a discussion of such safe spaces for online feminism)6. Regardless of how this space is precisely demarcated and how ‘separate’ it is, there is thus a clear understanding of platforms as being ‘separate’ somehow; from other platforms, from the ‘unsafe’ outside, or even from offline interaction.

The very idea of talking about these spaces as platforms, however, has been criticised by Tarleton Gillespie as a façade employed by entities like YouTube to appear as an egalitarian place that may be filled by anyone at their own leisure and responsibility – an “empty structure” (Brügger, 2015). Gillespie argues that the idea of a ‘platform’ is unproductive then because it “works against us developing [...] precision, offering as it does a comforting sense of technical neutrality and progressive

6 There are many examples of such attempts at creating an online safe space, but some particularly interesting ones are Briarhaven, a Tumblr-like site with a ‘safe’ design (https://www.indiegogo.com/projects/briarhaven-an-online-safe-space); Tutlub, “a social media network aimed specifically at being a safe space for Muslims on the Internet” (http://tutlub.com/); and Femplain, a site that focuses on “amplifying the voices of those who identify as women as well as non binary, agender and other gender nonconforming individuals” (https://femsplain.com/). Design-wise, these safe spaces are often very similar to existing sites and platforms; the main difference is focus and codes of conduct.
openness” (2010, p.360) which hinders us from addressing, for example, issues regarding free speech, business models, content moderation, et cetera. Especially when YouTube, Facebook or other social media giants talk about *themselves* as platforms, this is often done in a way that obfuscates these issues in favour of appearing more benign and shapeless.

Acknowledging that the word ‘platform’ comes with baggage then, it does remains a useful label precisely because it encapsulates (among other things) those multiple characteristics, many of which Gillespie mentions, e.g. of having computational accessibility and compatibility; and being a purpose-built object or space set apart for a specific reason; a basis for further activity and creativity; and a constellation of opinions and ideas. In other words, it does indeed allow various things to happen, precisely because it has in it all these characteristics. One thing to take away from Gillespie’s reservations then is to not let our understanding of the word ‘platform’ be determined by how social media giants have appropriated and “carefully massaged” (ibid.) the word and the discourse around it for their own propagandistic purposes. A platform is indeed not a *neutral* space, and in fact that is precisely the reason to undertake this research; to, through a number of illustrative case studies, investigate how it is not neutral.

In short, ‘platform’ can indeed be understood in many ways, and this ambiguity of the word has been (mis)used. As such, a clear definition would be welcome as a foundation for the further discussion of platforms in this thesis. Given the importance of platform studies to this thesis, it follows that the meaning of ‘platform’ in ‘platform studies’ would be the first place to look. Ian Bogost and Nick Montfort, when they originally proposed the platform studies approach, were chiefly interested in platforms as *computational* platforms. For them, however, this is not a narrow understanding of the concept as for example Gillespie (2010) suggests when he discusses ‘computational platforms’ as but one way of understanding platforms, as “an infrastructure that supports the design and use of particular applications” (p.350). Bogost and Montfort are interested in a computational platform enabling what they call “computational expression”, i.e. expression made possible by these platforms through their computational configuration, which can be interpreted not just as applications and software but any expression made through that platform:
Studies in computer science and engineering have addressed the question of how platforms are best developed and what is best encapsulated in the platform. Studies in digital media have addressed the cultural relevance of particular software that runs on platforms. But little work has been done on how the hardware and software of platforms influences, facilitates, or constrains particular forms of computational expression. (Bogost and Montfort, 2009a, p.5)

From this perspective, a platform is indeed a constellation of interrelated computer technology that allows for particular types of software to run on it; but, importantly, this is only interesting insofar as it helps us understand expression created through that technology, and indeed platforms can be studied through that expression, the two being inextricably linked. Bogost and Montfort cite Marc Andreesen, venture capitalist and erstwhile founder of the Netscape browser:

Definitionally, a “platform” is a system that can be reprogrammed and therefore customized by outside developers—users—and in that way, adapted to countless needs and niches that the platform’s original developers could not have possibly contemplated, much less had time to accommodate (Andreesen, cited in Bogost and Montfort, 2009b, p.4)

A platform, then, is a computational system that affords expression, and is in some way flexible; I propose here to understand ‘reprogramming’ broadly, to not just include writing new computer code that is interpreted and executed by the existing system but also to include the repurposing of existing feature for new and perhaps unexpected goals. As such, the computational perspective informs much of my approach here, and the software that constitutes the platform occupies a prominent role in my analysis of its materiality. But that software is not the end goal of this analysis; rather, the computational expression enabled through it is.

**Boundaries – demarcating a platform**

If a platform is a system that can be reconfigured, that raises the question of how one demarcates such a platform: what are its boundaries? A platform must have
boundaries, within which it can be reconfigured and within which things can happen; if not in the literal sense with barriers separating the cyberspace from the meatspace, then certainly in the more abstract sense of rules and regulations that define which practices are allowed within a certain context. Following van Dijck, the boundary of a platform can be understood as the moment one is no longer in the context formed by the platform, and thus no longer able to do the things the platform enables them to do. There may be a physical component to this: a video game platform such as the PlayStation or Nintendo Wii stops once one no longer has access to the device of the same name. But the boundaries are more importantly and fundamentally software-based: using a video game console, the player also requires the console’s operating system and of course the game software to play a game. Many online platforms, especially social network sites, attempt to be available on as many devices as possible, and as such their boundaries are almost completely software-based and rarely limit them to any specific device; rather, their ‘physical’ boundaries are having access to the internet in general, through any device that can reach their website or run their app. As such, digital and online platforms are mainly defined by their software, which can set the stage of what is and is not possible or allowed, and therefore their boundaries are primarily digital.

Such ‘digital’ boundaries can be difficult to properly define. In some cases, it is a matter of connecting one’s computer to a specific server through specific software; many chat applications work this way, and are not available until some specially-designed software which plays by the platform’s rules is used through which it is possible to connect to a central server. The boundary then is the connection to the server. This fits neatly with the idea of a platform as a computational system; the server software to which one connects sets computational boundaries, and therein one may reconfigure possibilities within the confines of that software.

This is complicated by the fact that the platform is only rarely this simple. Consider the way a visit to a modern website loads dozens of trackers, some of which come in the form of ‘social media buttons’ that are clearly part of another platform (Gerlitz and

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7 This limitation falls away when using an emulator, software that runs on (for example) a PC that is able to run game software for another platform (such as a game console). This is in many cases illegal, but illustrates how even a video game platform is partly defined by its software.
Helmond, 2013). Does this make the website that utilises that button part of the social media platform? What if it embeds both Twitter and Facebook buttons? Instead, it is perhaps more useful to consider that through widgets and other extensions, platforms may overlap or co-exist in multiple contexts.

So where does a platform end? Recalling Van Dijck’s remarks, the digital platform is a context configured to make things happen. And in a platform study where computational expression is a focus, what happens is initially determined computationally; if nothing else, the computational system underlying the platform sets the constraints of what can happen (on which more in section 3.2 and 3.3). Thus, a platform is demarcated by that computational system, and wherever one interacts with it and within it one is using that platform. Someone may ‘Like’ a tweet on Twitter itself, or via a widget embedding a tweet on a news website; while there is some difference in context, in both case you are interacting with Twitter as a platform. In both cases this happens within Twitter’s platform, as the rules that determine what is possible concerning interacting with the tweet are set by Twitter; it is possible to like the tweet, but only if the one doing it has a Twitter account, and the author hasn’t blocked them, for example.

The social platform—Social Network Sites and beyond

What then is worth some further discussion is the notion of a social platform. A video game platform is not primarily designed to encourage social interaction (though this may be part of it). Neither is, for example, a newspaper’s website; though often these allow for reader comment, they are still primarily a place for the newspaper’s staff to publish their writing. A social platform, on the other hand, is designed with the explicit goal of allowing the people on it to interact, and has features to facilitate this. An online social platform may for example allow people to mark others as their friends or join a discussion about a specific topic.

The idea of a social platform should be contrasted with the more prevalent ‘Social Network Site’. Social Network Sites, or SNSs, are a relatively well-researched category of online services focused at social interaction, but the term usually describes what could be seen as a subset of a larger constellation of online communication platforms. In Social Network Sites: Definition, History, and Scholarship, perhaps the first attempt
at defining the concept of an SNS, danah boyd and Nicole Ellison define SNSs as an integration of three key features, allowing a user to:

1. construct a public or semi-public profile within a bounded system,
2. articulate a list of other users with whom they share a connection, and
3. view and traverse their list of connections and those made by others within the system. (boyd and Ellison, 2008, p.211)

In other words, the central feature of an SNS is the implementation of the social graph, the links between users of the site and the ability to navigate those links. The authors give SixDegrees.com, launched in 1997, as the earliest example of such a site; later examples include sites such as LiveJournal, Friendster, Hyves and of course Facebook. The articulation of one’s social graph that these sites offer can indeed be seen as a feature that distinguishes these sites from earlier online communication platforms; explicit ‘friending’ was not necessarily a novel feature—for example, chat applications such as ICQ (launched in 1996) worked with a “friend list”—but being able to see others’ friend lists was. On the other hand, it is questionable whether this in itself is a useful distinction to make. In a response to boyd and Ellison, sociologist David Beer argues that it makes for a strict but often misleading categorization. For example, it puts sites like YouTube and Facebook in the same category, while from a social perspective these sites are quite different (Beer, 2008, p.518). Another argument against boyd and Ellison’s classification would be that some sites are quite obviously built with social interaction and connections to other users in mind, but do not articulate the social graph to their users clearly; e.g. dating sites. These would perhaps be social networking sites but not social network sites in this typology.

An alternative is proposed by Mike Thelwall, who suggests that it is more useful to distinguish sites based on their purpose rather than their features. He distinguishes three main purposes; socializing (for “recreational social communication”), networking (“finding new contacts”, e.g. LinkedIn), and navigating (“social features [...] to help users find a particular type of information or resource”, e.g. YouTube). (Thelwall, 2009, p.22). From this perspective, the precise structure of a platform’s social graph or its particular features take a backseat to the kind of usage those characteristics may enable.
However, even with a more fine-grained classification the concept of Social Network Sites still only covers a fraction of online platforms where social interaction and conscious self-presentation take place, for reasons both conceptual and chronological (by 1997 the internet already had a rich history of social applications). Explicit profiles and reification of social connections may be important (and influential) developments in the sphere of online communication, but they are not prerequisites for it; thriving online communities in which new and old social connections were cultivated existed long before these things were made explicit. During the 1990s much was made of the social possibilities of internet platforms such as IRC, MUDs and mailing lists (see e.g. Reid, 1991; Hafner and Lyon, 1996; Turkle, 1997; Hauben and Hauben, 1997); technologies that are different from contemporary social network sites but not less social.

Therefore, when investigating online platforms, an analysis that limits itself to SNSs will miss out on many other online places where social interaction was not only the focus but also approached in innovative ways. Regardless of the popularity of SNSs as a frame, it is therefore necessary to broaden it and include other forms of computer-mediated communication, to speak here of platforms rather than sites. Not only does this shift the focus from a specific ‘place’ on the internet to a more general ideas of contexts that enable certain practice, but the very use of the word ‘site’ implies a type of platform that is available through a website on the world wide web, which ignores the many platforms that do not rely on this as infrastructure.

**Beyond SNSs—protocol-based platforms**

If social network sites are not all there is when it comes to online social platforms, what else is there? Computer-mediated-communication (CMC) has a long history and as a term covers many, sometimes very different methods of communication using the internet. The ur-example is probably e-mail, or more generally speaking asynchronous text messages from one user to another; this mode of communication was available at the inception of networked computers and is still popular today. This application of networking has spawned several offshoots such as mailing lists. One of the most popular and influential early online platforms, Usenet, was in fact a derivative of e-mail as well, and had much with it in common technologically; as is made clear in Michael
and Ronda Hauben’s *Netizens* (1997), the distinction between mailing lists and news groups was initially political rather than technical in nature (p.153).

Platforms such as Usenet, which rely on a common *protocol* rather than a centralized website or app, are perhaps not normally considered to be in the same epistemological category as sites like Facebook or Twitter. And one could argue that spaces like Usenet do not necessarily constitute *platforms*. Anyone can set up an e-mail or Usenet server, which is then not automatically connected with other servers—the technology does not automatically put its users into a shared context in which a specific kind of activity may take place, as happens when one connects to Facebook or Twitter. In the case of Usenet, one network may contain different content than another, and a post posted on one will thus not always be seen by others that are not connected to it. However, Hauben and Hauben’s *Netizens*, the aforementioned history of the initial years of Usenet’s existence, makes it clear that its users did see it as a distinct platform, contrasting themselves to users of other technologies such as mailing lists (130). Even if ‘Usenet’ consisted of insular, unconnected sub-networks, they shared a protocol that set the rules for what was and was not possible, and developed a common set of conventions and etiquette that permeated practices.

In other words, the platform was defined by its protocol (the ‘rules’) and the practice enabled and informed by it. This *protocol* is therefore what unifies the Usenet platform; while separate networks may not be interconnected, they are still identical in how they deal with incoming and outgoing data transfers, and consequently with what people can and cannot do on them. Anyone can write a Usenet reader or start a server, but as long as it truly is a Usenet server—i.e. as long as it implements the protocol correctly—any reader should be able to connect to any server, and in turn do anything the protocol allows for. On a more general level it is therefore certainly reasonable to speak of Usenet as a unified platform, albeit with the distinction that it is federated in nature; with distinct, self-reliant and oftentimes disconnected networks forming a larger entity that can be referred to as ‘the Usenet’.

In the case of Usenet, and other similarly open and protocol-based communication methods like the later IRC (Internet Relay Chat, which I will discuss in more detail in the following chapters), a platform would consist of a network of several separate but sometimes interconnected servers, on which a specific kind of activity may take place.
as defined by the protocol these servers implement. This may seem to be a prohibitive disadvantage with regards to how attractive they are to users, compared to more centralized platforms, adding complexity and being less user-friendly. However, the distributed nature of the platform is also a strength, allowing it to survive without reliance to a single company or software developer, and being more receptive to input from the people using it. There is thus a trade-off here between the technological resilience of an open, distributed platform like IRC and a platform like Twitter that is closed but concentrated and well-marketed by one driving entity (its owner).

Alexander Galloway, who is perhaps the most prominent writer on protocol-based internet technology, argues that it is especially because of the decentralized nature of the network that such protocol-based networks can be successful (2004, p.26), through their potential for wide adoption and resistance to the whims of a centralized creator.

The servers and the clients connecting to these networks form a platform on which a specific kind of communication takes place, governed by what the protocol implemented by them affords. Additionally, they are accessed through software that is—at least in part—designed based on these protocols’ requirements for successfully connecting to servers or clients. It is obvious why colloquially people may speak of ‘posting on Usenet’ or ‘getting on IRC’.

Decentralized and centralized: the problem of architecture

Fast-forwarding again, in 2016 the landscape seems to decidedly favour the more centralized Twitter-style kind of platform, with a clear owner that strictly controls access to it. The decentralized, open paradigm of Usenet and other similar platforms from its era has given way to the opposite: a platform that takes shape as a centralized system fully controlled by one entity, usually a corporation that has an interest in making money through operating the platform. On such a platform, it is no longer possible for people to develop their own client or server software; instead, the owner of the platform supplies interfaces via web sites and apps. Both types of platforms are still places with digital boundaries beyond which one can no longer do what the platform was designed to afford. In the case of closed platforms, this is because the
software (designed by its owner) does not allow for it; in the case of protocol-based platforms, because the protocol was not designed to support it.

This is in essence the distinction between centralized and decentralized (or federated) networks. In what is perhaps an attempt to attain the best of both worlds some have developed platforms similar to the unified experience offered by Twitter and Facebook, but with a decentralized or federated rather than centralized architecture. Perhaps the most prominent example is Diaspora, a crowdfunded platform, similar in appearance to Facebook, which is distributed through multiple ‘pods’ on which users create a profile; in principle, everyone can start such a pod. While Diaspora is functionally roughly comparable to Facebook (Hui and Halpin, 2013, p.112), the ‘behind the scenes’ design is radically different. There are a number of issues with this hybrid form; for example, when data is synchronized from server to server, all it would take for privacy to be compromised is one server that doesn’t “play by the rules” (Narayanan et al., 2012, p.5). However, the platform remains a good example of an alternative implementation of features common to most contemporary social platforms.

Clearly social platforms may radically differ with regard to network architecture which makes it difficult to define a platform based on its ‘boundaries’ or even the software that is used. Whereas Facebook is only accessible via the Facebook site or using the Facebook app, Diaspora may be accessed via a number of sites, while Usenet groups could be accessed via any combination of server and client software. With this in mind, recall the question stated at the beginning of this paragraph—what is an online communication platform? A partial answer is that just like the more narrow category of Social Network Sites, a platform has to be a “bounded system” of some sort, and that these boundaries—or rules—determine what is and isn’t possible on a platform, and thereby the platform. But by what is the system bound? When can one no longer do what the platform was made to make possible?

In some cases, such as a decentralized network, the boundaries may be formed by the underlying protocol, which enables certain functionality that would be available through any compliant interface. In the case of a centralized network, the question is slightly more complex. Speaking of Facebook, we primarily think of the Facebook website and its mobile apps. But what of Facebook Messenger? What of Facebook’s
‘Like’ buttons, embedded on many sites external to the network itself? What of blogs that allow viewers to comment using their Facebook account and identity? Facebook and other similar platforms, based on the world wide web, are easily embedded on places that are strictly speaking not part of Facebook itself. To some extent this can be framed through the aforementioned idea of ‘embassies’; one site may contain multiple platforms, and the ‘Like’ button is then a sort of ‘embassy’ of Facebook on the site. But more complex arrangements are possible, again due to the technology on which these platforms are built.

In essence the root of the complexity, and the many possibilities for online social platforms to establish enclaves or embassies within each other, is the fact that many social platforms run on a software platform by themselves—that platform being the world wide web. The web is a platform based on the Hypertext Transfer Protocol (HTTP); thus, most social network sites are connected to using this protocol, via either a web browser (which is in essence a general purpose HTTP client) or a proprietary app.

Here the comparison of a platform like Facebook with, say, Usenet or IRC becomes complex. Usenet and IRC are themselves protocols; HTTP is a technically speaking a similar protocol, but one on top of which many distinct services have been built. Facebook and other social network sites are some of these services, often called ‘web platforms’ (see e.g. Fuchs, 2011), emphasizing their dependence on the world wide web as an underlying platform. There must be a distinction between the WWW and Facebook then, which is perhaps best defined through the structures of control found in this context.

On web platforms, in one sense, users are still free to choose or create their own client; there is plenty of choice in web browsers. Through user intervention modification of the social platform’s interface may be possible as well, to some extent; in his essay Facebook resistance (2011), Marc Stumpel explores how personalized, cosmetic changes can be made to Facebook’s user interface, for example (p.274). Such modifications never go further than being cosmetic however unless the platform explicitly allows it (e.g. MySpace and Hyves used to allow users to customize their profiles using HTML and CSS markup, and these changes would be visible to other users visiting the profile as well). Thus even though strictly speaking the web is a
protocol-based platform on which users can choose their own client, in practice most social platforms are ‘walled gardens’ within this platform.

The main difference is that while Twitter, Facebook and many Social Network Sites are ‘walled gardens’ built on top of a protocol, platforms like Usenet are in essence a protocol and nothing else. In the latter case, the platform consists of servers and nodes that share a protocol; through the shared protocol, information can be shared between nodes and they may be connected to each other. In the case of ‘walled gardens’, the information is centralized and can be accessed through a number of interfaces supplied and controlled by the same entity that controls this centralized repository of information. Protocols may still be at play in the latter case, and do inform the design of the platform, but their role is more limited and users typically are not able to engage with them in a useful way (e.g. by creating their own software). Instead, the platform is more or less defined by this control over the centralized repository of information, and the manner in which it is accessed. This also means that self-presentations are more thoroughly defined by the platform owner, as they can only be accessed through their software, and users have little influence over how they are accessed.

Towards a definition, and how to study a platform

The ‘rules’ that determine what is and is not possible on a platform are thus partly a result of the technical underpinnings of the platform, which in turn create structures of power and influence that have the power to enforce (via constraints) or guide (via affordances) practices on the platform. The boundaries of a platform, or the limits of the ephemeral ‘space’ that it constitutes, are then set by the platform’s software; either through a protocol, which provides unambiguous and strict constraints on what can and cannot be said on it, or via the intermediary of an app or web interface, which has similar power but obfuscates the exact rules of it.

Platforms then are systems that can be reconfigured by their users. In this I mainly follow Bogost and Montfort (2009a)’s understanding of ‘platform’ within their platform studies framework, where reconfiguration is initially mainly understood as a matter of writing new code, but I take José van Dijck (2013)’s broad understanding of the ‘platform’ concept in a social context as a pointer to consider this to also include
reconfiguration in a more general sense, by reappropriating the existing features and affordances of the platform to make new things possible. The boundaries of this system are computational, demarcating a space where particular things are possible (though not all things that are possible are done) through a specific set of features and programmatically available API endpoints or protocol compatibilities.

In discussing this I have already used the term ‘affordance’. Affordances are a key term here, being precisely those characteristics of a platform that influence and guide what can be done on it. In the next paragraph I will therefore explore the concept and its role in this process in more detail.

3.2. Affordances

When studying the use of computer software, it is in general hard to avoid the concept of affordances, or how what is and what is not made possible or easy shapes the way we use software. The concept, originating in J.J. Gibson’s work on animal behaviour, is often used in discourse surrounding both digital and “non-digital” interaction design. Donald Norman’s original conceptualization of affordances in such contexts—“those fundamental properties that define just how [a] thing could be used” (1988, p.9) is, with modifications, still relevant here. Affordances are often explicitly part of software’s design process, with extensive testing to ensure a particular web app or page is set up just so that users have the least trouble performing whatever action the software designer deems desirable.

However, “affordance” quickly after its popularization became a fairly ambiguous term, with a variety of operational definitions that were not always mutually compatible; something acknowledged by Norman himself (Norman, 1999, p.41). Notably, Martin Oliver argues that the concept has drifted so far from its original meanings that it is as good as useless; the divergent meanings contradict each other, though they have in common that they imply an agency of the object that has the affordance. However, Oliver argues that possibilities for use are not embedded in an object, but rather in the imagination of whoever uses the object—and if the imagination is incompatible with the object, the user may find other ways to pursue it.
(Oliver, 2005, p.412). According to Oliver, affordances are thus an obstacle in understanding interaction, putting the focus on the object rather than the person interacting with it, while the latter is more important.

In her monograph It’s Complicated, danah boyd likewise acknowledges such criticisms, but employs the concept as a "construct for addressing the design features with which people must contend" (boyd, 2014, p.222), noting that such features "make possible [and] encourage certain types of practices, even if they do not determine what practices will unfold" (ibid., 10). In a new media context, affordances have then often been studied through the lens of computer interfaces; David Berry notes that computer systems “present to the user a certain function, or range of functions, that are stabilised and formatted through a particular human-computer interface, very often graphical” (2011, p.15); interfaces are the medium through which we perceive and interact with the affordances of the system. Conversely, the actual inner workings of the software mostly remain a “black box” (ibid.); any perception that someone using the software has is mediated by the interface and thus that interface is the source of information on the software’s affordances, foregrounding it as a site for research into affordances.

However, affordances can be operational on multiple other levels when talking about platforms, in addition to the interface. In a 2017 review of the various ways in which affordances have been used in media and communication research, Anne Helmond and Taina Bucher enumerated five different perspectives on affordances that may be distinguished here, ranging from “affordances as a relational property”, i.e. Gibson’s original understanding of the term (p.237) to more context-specific appropriations of the concept, such as “communicative affordances” which are primarily employed in literature on mobile communication devices (p.243).

One understanding of affordances that Bucher & Helmond identify is particularly relevant here. Drawing on the work of interaction researcher William Gaver, they identify “technology affordances” as “the material features of technology [which] may have many effects on the social conventions that surround them” (p. 240-241). For Gaver, this materiality is often understood in terms of Norman-esque door handles but not limited to purely physical technology; e-mail is given as an example of a technology that “strongly constrain[s] the cultures that might develop” even if it “may not
determine the communities that eventually form around them” (Gaver, cited in Bucher & Helmond 2017, p.241). In other words, while a technology does not teleologically dictate what happens with it, its materiality does shape the forms of interaction possible through it, which constitutes the affordance. Following this, in a platform study this understanding of affordances provides a useful analytical framing, through which a platform may be studied in terms of how its specific materiality promotes or shapes particular types of interaction and community (on which more later in this chapter) that may form on it.

It should be noted here that the various interpretations of affordances Helmond & Bucher distinguish, of which Gaver’s is one, are not mutually exclusive. For example, drawing on the work of scholars such as Barry Wellman and Hector Postigo, they also identify ‘social affordances’ as a way of investigating “how technological properties enable and constrain sociality in certain ways” (ibid., p. 242) which is very close to Gaver’s perspective discussed above. Rather than being oppositional concepts, the difference is one of nuance; as Bucher and Helmond note, through “opposite prefixes, they both seem to be referring to the way in which technology affords sociality” (ibid.). Whereas thinking of affordances as technology affordances puts a focus on the technology, social affordances put the focus on the “social structures that take shape”. My focus, in this thesis, takes the technology as a starting point for its analysis, and thus my understanding of affordances here is closest to Gaver’s.

How, then, is this understanding of affordances as technology affordances to be operationalised? Twitter’s character limit can be seen as such a technology affordance, affording particular kinds of communication through its short messages, but users have little choice in the matter: even if they would want to send long messages, this simply is not possible\(^8\). In that sense, Twitter’s character limit is not so much an affordance of Twitter’s technology as it is an outright constraint: Twitter does not nudge one to be succinct in their messaging, but outright forces this by making it impossible to tweet longer messages, this then being a constraint rather than an affordance.

\(^8\) There is of course the possibility of dividing one long message into several shorter messages, or putting the message in an attached image, or similar ‘workarounds’. But there is still the constraint that one message can only contain 280 characters at most.
On the other hand, this is not necessarily a useful distinction to make. Gaver himself seems to use the terms more or less interchangeably, or at least implies that there is a close connection between the two (1996, p.121; ibid., p.128). And indeed, both affordances and constraints guide what one can do with software and though one may be ‘softer’ than the other, in that the user can act contrary to an affordance but can usually not circumvent a constraint, this is perhaps better understood as a gradient of potentialities than two strictly separate concepts that influence expression in a wholly different manner.

This is also echoed by Norman who describes physical constraints (as opposed to e.g. cultural constraints) as “closely related to real affordances” (Norman, 1999, p.40). Norman distinguishes between the “real affordance” and the “perceived affordance” – where the former is an inherent quality of the object or software, the latter exists only in the perception of the user and is what the user perceives to be possible, or desirable, in interaction (ibid.). There is therefore perhaps no useful distinction between a “real affordance” and a physical constraint; the distinction instead is between real and perceived affordances.

But in the case of software, even this distinction is not always so clear. On IRC, for example, communication is fundamentally text-based. This could be seen as a physical constraint, or real affordance; it is fundamentally impossible to send images via IRC. Unless one is using a client that shows a preview of any link sent by chat partners, which could as well be a link to an image—in which case users are effectively capable of sending an image to someone over IRC. A similar case is Twitter’s facility of embedding images into tweets, which is widely used to embed images containing text longer than 280 characters, thus circumventing the physical constraint of 280 characters per message. Are these limitations constraints, then, or technology affordances, and if so, are they real affordances or perceived affordances? And if they are perceived affordances, does it depend on the user whether they are in fact perceived affordances, as those who know how to embed images in tweets or use an IRC client with link preview would probably not actually perceive the limitation as such? It seems that the concept of affordances as being more than just a constraint does not stand up to scrutiny in this context, at least not in the sense it is understood by Norman.
An interesting alternative angle on the issue is that of sociologists Keith Grint and Steve Woolgar, who in *The Machine at Work* propose to distinguish different readings of technology—thus understanding technology, in this case the software platform, as text. The text may have a preferred reading—preferred by its makers—but depending on the reader this reading may change, even radically so (1997, p.70). This is in principle a useful and persuasive way to understand how people interact with a social platform. There clearly is a preferred reading—IRC as a platform for text messages, Twitter as a platform for short messages—but users may have radically different readings depending on how and through which tools they interact with the platform. In this the technology’s affordances become visible.

More concretely, Gaver’s framing of affordances as *technology affordances* then offers a solid way of understanding how users interact with online social platforms that will underlie the further discussions of affordances in this thesis, while Grint and Woolgar’s technology-as-text metaphor offers a persuasive way of understanding one’s negotiation of these affordances as constituting different ‘readings’ of the technology. The question is what happens when such a reading disagrees or even clashes with the preferred reading. As a practical example, people may have found ways to challenge Twitter’s limit of 280 characters per message, but Twitter still has the ultimate control over the platform, and may in turn adapt or change their platform in response to such radical readings. Such tensions are at the heart of the analysis in this thesis’ later chapters.

### 3.3. Protocols and Standards (and Technology Affordances)

With that in mind, how can affordances be of use in determining how people express themselves on social platforms? It is useful here to return to the previously discussed definition of social platforms, and recall that they may be protocol-based or closed, where ‘closed’ often means ‘world wide web-based’, being available through apps and sites controlled by the platform owner. As discussed, this has implications for the design of the platform, and consequently for how affordances come into play. In
protocol-based platforms there often is a variety of software (and thus interfaces) for users to choose from while in web-based platforms this choice is typically limited. Consequently, software affordances will be more similar for those on a closed, centralized platform while they will vary based on the software that is used in other cases.

However, before even looking at the software used to interact with these platforms, it is useful to consider the impact of client software for such platforms on a more general level. As client software must be able to communicate with the ‘parent’ platform—through an open protocol or some proprietary API—the constraints and requirements of this mode of communication inform the software design, and thus its affordances. Perhaps most useful in this regard is the work of law scholar Lawrence Lessig on the way network design shapes what is possible on the network and, perhaps more importantly, what isn’t; a notion Lessig succinctly summarizes as “code is law” (2006, p.7). While Lessig focuses on software as a means of regulation—how the architecture of the internet can influence the extent to which free expression is possible—his description of the influence software architecture may have on what is possible with that software rings true when applied in the context of expression on platforms as well.

Interesting here is Lessig’s argument that software code constitutes the “constitutions of cyberspace”. Constitution here is “an architecture - not a legal text but a way of life - that structures and constrains social and legal power, to the end of protecting fundamental values” (Lessig, 2006, p.4). Here moral values enter the picture; “computational expression” is shaped by the platform through which it is expressed, but the platform in turn is shaped by—amongst other things—the moral decisions made by its creator.

When Lessig talks about code as law, open protocols are perhaps the clearest example of that; a protocol is after all a set of guidelines which a piece of software must follow to be able to interact with other entities implementing the same protocol. Not implementing the protocol (correctly) often means communication between two entities is impossible. Thus, any values “embedded” in the protocol need to be followed by implementing entities to be part of the network based on the protocol, in
an often binary state of affairs; either implement the protocol and be part of the network, or don’t and stay disconnected.

It should be noted here that even though a distinction was previously made between protocol-based and web-based platforms, protocols are fundamental to online communication and always at work at some level. Even though many social networks are not accessible through third-party apps, first-party apps and websites still use protocols to request the information that is then displayed in their app or browser; often through HTTP, the protocol used to request a web page by a browser. Some services also offer an API through which third-party applications can request information from their servers. This is for all intents and purposes a protocol by another name; a set of commands and instructions that, for example, allow Twitter’s servers and an app to understand each other. Twitter, through this API, can enforce its ideas of how its server should (and can) be used. Many Twitter features are not available through it and apps are limited in the amount of requests they can send through it; thus, anyone that wants the ‘full’ Twitter experience will in practice be required to use the official clients or website.

In other cases, the way expected types of usage are embedded in a protocol may be more subtle. Internet protocols are often standardized in the format of an RFC, or Request For Comments; a document published by the IETF (Internet Engineering Task Force) which describes the protocol unambiguously for implementers. Guidelines are classified by how crucial their implementation is for conforming to the protocol; these classifications are in turn standardized using keywords such as “MUST”, “SHALL”, “SHOULD” or “MAY” (Bradner, 1997). Thus the protocol specification may mandate implementation of some aspects, while leaving other aspects at the discretion of the implementer. However, such RFCs are at best guidelines and often contain the bare minimum of what a server or client should do to be able to connect to others. The actual implementation of the protocol—a Twitter app, IRC client, or Usenet news reader—still gives the developer a considerable amount of freedom in how they design the interface between the user and the protocol-based bits sent from client to server. So while protocols are interesting to investigate when looking into the affordances of a social platform’s software, and their affordances (or strict limitations) are fundamental to the design of software that implements them, their influence on the design of
software is in the end limited, and their impact is mostly in forcing users to use one particular application or website.

Technology affordances are thus not only found in the software we use for online expression, but also exist on a further level where various protocols and standards afford different computational systems to be built on top of them, which then may be used directly by people to, for example, post tweets on or talk to one another. As such, they give rise to different kinds of online social groupings. Of particular interest here is the notion of community; one of those words that is used often to describe people grouping together online but that requires closer scrutiny if it is to be used in a more analytical way. As such, in the next section I discuss when one can speak of online communities and how this concept can be framed academically.

3.4. Community

Another theme of this thesis is community. I am concerned here with online social interaction, and more specifically what the affordances of IRC and Twitter in terms of community creation are. When people group together on a platform a community emerges; an often vaguely defined constellation of people and how they interact with each other. In this thesis, this is particularly the focus of chapter 6, where I offer an analysis of to what extent both platforms afford the formation of sustainable communities, but more generally I discuss a number of communities and their various idiosyncrasies as part of my exploration of IRC and Twitter. The opportunities online platforms offer for the creation and sustenance of communities have been debated in many contexts and for a long time; they can therefore serve as a great case study when one’s goal is to investigate a platform’s communicative affordances.

A potential problem here is the difficulty of defining what ‘community’ actually means. As Caroline Haythornthwaite put it, ‘the very notion of community in an online context can begin a hot debate’ (2007, p. 121). A serviceable starting point here is Howard’s Rheingold coining of the a ‘virtual community’ in his writings on the WELL in 1993. Rheingold was perhaps the most prominent of all early writers who concerned themselves with online community, and for him, ‘virtual community’ was a way of
describing what was going on on online social platforms such as the WELL. The ‘virtual’ here recalls the 1990s-era cyberspace perspective of a virtual online world opposing the off-line ‘real’ world, and indeed Rheingold’s writing is characterised by a sense of wonder about how productive such an online environment could be. His oft-quoted, succinct definition of a virtual community here is:

[V]irtual communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace (Rheingold 1993, p.5)

Rheingold further argued that “whenever computer mediated communications technology becomes available to people anywhere, they inevitably build communities with it,” (ibid.) a statement that had him labeled as a technological determinist by Quintin Jones (1997), as it implies that any technology will inevitably lead people to use it in building communities. From another perspective, it is not so much the technology here that is deterministic, but rather humans that are simply wont to create communities in whatever context they find themselves in, focusing the determinism in human nature itself.

Whatever the case may be in that regard, Rheingold’s definition is succinct and perhaps intuitively true enough, but is also too vague to offer a clear framework through which one may evaluate to what extent communities exist somewhere, and how those communities could be demarcated. Additionally, around the turn of the century, the ‘virtual’/’cyber’ focus fell out of favour for obfuscating the very real consequences of online behaviour and the physical and geographically bound underpinnings of the technology all these platforms and communities ran on. In an early example of this, in 1997 Quentin Jones proposed a ‘cyber-archeological’ approach in which one investigates online communities through a study of the material properties of the ‘virtual settlement’ (i.e. environment) of such communities (Jones, 1997).

While very much steeped in 1990s-era terminology – in the abstract of the article in question, ‘cyber’ appears as a prefix no fewer than seven times – Jones’ article can be seen as a herald of a newfound appreciation for analytical approaches to community
that did not set the virtual community apart as a phenomenon conceptually separate from the more general 'community'. The idea of the virtual community as something inexorably bound to the characteristics of the web as a medium gave way to a newfound appreciation for existing work on community, mostly from a sociological perspective, and a call for a more rigorous framework through which to analyse online community. Nancy Baym, in her 2000 study into online fan communities Tune In, Log On, noted that clearly defined frameworks on community were in “short supply”, with existing work on the topic of internet-based communities mostly concerned with either ‘autobiographical accounts’, or the relative merits of online communities viz-a-viz offline communities, or whether they were ‘real’ communities at all (p.3). Baym however is primarily concerned with fan communities here, and stops short of providing a more general framework of online communities and what their constitutive objects or characteristics could be.

In a 2007 review of the existing discourse on online community, Caroline Haythornthwaite argues that community is characterized by ‘the network relations that connect actors and the cumulative effect of patterns of interaction that add value to the network above the level of pairwise interconnection’ (2007, p. 133). It further ‘require[s] relations of emotional and social support, provision of small and large services and adherence to and policing of common norms exhibited through shared language, common purpose and shared history’ (ibid.). This definition bears a remarkable similarity to the ‘sense of community’ (SoC) model proposed by McMillan and Chavis as early as 1986, which has seen uptake primarily in psychological circles, and proposes that a ‘sense of community’ is present if four conditions are fulfilled:

- Feelings of membership: Feelings of belonging to, and identifying with, the community;
- Feelings of influence: Feelings of having influence on, and being influenced by, the community;
- Integration and fulfillment of needs: Feelings of being supported by others in the community while also supporting them; and
- Shared emotional connection: Feelings of relationships, shared history, and a “spirit” of community. (McMillan & Chavis, 1986)

Both Haythornthwaite and McMillan and Chavis emphasise the role of meaningful relationships; emotional and social support; a shared history; and a generalized
identification with a group of people. While Haythornthwaite does not cite the SoC model, her findings thus indicate that its model of community also could apply in this particular online context. Indeed, in a paper concerned with the distinction between ‘virtual community’ and ‘virtual group’, Anita Blanchard argues that while the SoC model has not been particularly popular among scholars of online culture, the body of literature that has been produced in this context does seem to indicate that the characteristics the SoC model identifies appear in an online context as well as offline (2003, p.3), an assertion strengthened by Haythornthwaite’s findings which suggest characteristics that are generally very similar to those McMillan and Chavis found.

If our goal then is to investigate to what extent formation of community is afforded by a platform, the four characteristics in the SoC model are suitable as a guiding principle here, and provide an analytical framework that can be used to evaluate to what extent IRC and Twitter afford formation of communities. This is a relevant aspect of the analysis as it alludes to the ‘social’ in social platform; these platforms are social, but what modes of sociality do they afford? One aspect of this is an analysis of what people do; another aspect of this is a more structural appraisal of the platform’s features and to what extent they allow for interaction that matches existing models of sociality, including the formation of communities. Together, these two angles of analysis offer a comprehensive picture of what’s going on here.

I will return to these four characteristics and to what extent Twitter and IRC can manage to fulfill them in more detail later in this thesis, in chapter 6. But more generally, this is what I refer to when I discuss ‘community’ in other places; a combination of the four features found in the SoC model, with varying levels of success, but nevertheless providing the people active in it some semblance of belonging to a particular group with its own peculiarities.

### 3.5. Imaginary

Another relevant component of this thesis’ project is that of the idea people have of a platform, which may or may not differ significantly from the idea a platform has about itself, or the popular image of a platform. I focus on this specifically in chapter 7,
where I look at popular reception of IRC and Twitter, and what people can do to bring their lived experience of the platform more in line with their idea of it. But it is a theme that permeates this thesis more broadly as well: what do people think they can do on a platform, and how does that relate to the features and design of the platform’s software?

This relationship between a platform or technology and what people think of it has been described in literature from a number of perspectives. One is that of “media ideologies”, a concept coined by linguist Ilana Gershon in 2010. Gershon uses this concept to discuss “how people understand both the communicative possibilities and the material limitations” of communication technology (ibid.). As these “understandings of [...] media will shape, although not determine, their communicative practices” (p.284), they are a crucial component of any analysis of the relation between a platform and what people do with it, next to the more material focus on the platform’s own features and design.

Imar de Vries, in Tantalisingly Close, his history of our ‘preoccupation with wireless communication devices’, investigates these “understandings of media” or, as he calls them, “myths of communication” (2011, p.76). For de Vries, these myths are imaginaries that exist around communication technology in a general sense, comprising the various (usually utopian) visions people have about what communication technology can do for them and the world. These are important because, as he claims, such myths inform the attitudes of both those using and developing the technology, and hence we need to understand such myths if we are to understand the evolution of the communication technology we use (p.19).

Compared to Gershon, de Vries takes a broader view here, investigating the “undercurrent” (p.18) that permeates the development and use of communication technology rather than Gershon’s more precise focus on how people’s own discursive practices are influenced by the their understanding of the media through which these are performed. But both identify a relationship between attitudes and practices that has a real effect on what people do; on what kind of technology they build, on what they do on social media, and crucially also on what they won’t do.

Next to media ideologies and myths of communication, a concept that has some currency in discourse concerned with this relationship is that of ‘media imaginaries’,
the “imaginaries that shape and are shaped by people’s conceptions of the relationship between technology and society” (Treré et al. 2017, p.405). Again, this is conceptualized as a mutual process, where what people do with media is informed by their preconceived notions of what that medium is. Media imaginaries may then be investigated at various levels of specificity and in various dimensions. For example, Treré et al. (2017) investigated how media imaginaries work in the use of – primarily – Facebook and Twitter among South-European activist groups. Lesage and Rinfret (2015) take the whole Web as their object of analysis, but focus on particular media imaginaries (those of the Semantic Web and Web 2.0) and their impact on its development. Asthana and Havandjian (2013) focus on a particular demographic group – Palestinian youth – to map their media general imaginaries.

Whether one calls it a media ideology, a myth of communication or – as most authors do – a media imaginary, these “cultural receptions of media” (Natale & Balbi 2014, p.203) are an important addition to any framework that hopes to make sense of platform-specificity in online social expression. Of course, the design of a platform has direct consequences for its usage, in affording particular modes of use and not affording others through characteristics such as its features, interfaces, and availability. This is the material aspect. But crucially it is not only the platform that determines what happens on it; people are active agents in this process, and their choices are not only influenced by what the platform offers to them in terms of interface affordances, but also by preconceived notion about what the platform should be used for.

For this thesis, it is not my goal to map media imaginaries for a particular group or even for a particular platform. Rather, the objective is to analyze the affordances of these platforms with an awareness that media imaginaries are present in the appropriation and operationalization of these affordances. People have ideas about platforms, or the internet, and those are a factor in their decisions what to do with those. As such, they can be of use in explaining why a particular feature became popular at a given time despite its architectural problems (as I discuss in my analysis of the hashtag in chapter 4) or how a platform could become associated with what was a relatively brief or insignificant episode in its history (as I relate in my discussion of IRC’s image in chapter 6).
I thus take the existing work on media imaginaries, in this case meaning a more specific variation of Treré’s reading of them, as impressions that shape and are shaped by people’s conceptions of the relationship between a technology and society, as a starting point. Thereby I acknowledge them as a factor, and use them as an addition to the materially oriented platform studies toolbox. As Gershon notes, this materiality informs a media imaginary (or ideology, p.285); but an awareness of media imaginaries allows analysis of an important next step where such materiality is reflected back through the appraisal someone makes of it informed by their existing ideas about “how communication can take place” (ibid.).

3.6. Conclusion

In this chapter I have discussed five concepts that in various ways are foundational to the more empirical analysis I will move forward with in the following chapters. Some of these – such as platforms and affordances – will come up repeatedly as they are central to the questions asked by this thesis. Others – community and imaginary and – are more specifically relevant to a particular part of my analysis, where they are foregrounded, while they are kept in the background in other parts, informing but not explicitly being relevant to the analysis therein. But together, these concepts frame my understanding of how one may investigate Twitter and IRC in a historically oriented platform study.

These two platforms are taken to be platforms in the sense of spaces that may be reconfigured within direct and indirect computational boundaries. In this, technology affordances are created, which constrain and nudge sociality on these platforms in certain directions. Subsequently, various modes of use and social configurations like communities may be formed within those parameters, informed by these affordances. Part of that process of usage taking shape on a platform are media imaginaries, where people form conceptions of what the technology can and cannot do for them, which informs their use of it.

As part of this platform study, I investigate ‘particularly enlightening’ case studies to more closely study the particularities of IRC and Twitter. As such, in the next few
chapters I investigate a number of case studies that can be said to be ‘particularly enlightening’ by these standards, which can be broadly divided into three categories:

- Influential features. These are hashtags and @replies on Twitter; and client-side scripting (chat bots) and the /me command on IRC. These features have their own histories and links to existing technologies, and have also been widely successful to such an extent that they are an integral and sometimes iconic part of the platform, and can therefore be enlightening case studies. This is particularly the focus of chapters 4 and 5.

- Novel or iconic appropriations of the platform through such features. On IRC, this for example refers to re-appropriating some of its features for theatre improvisation, or the various workarounds people develop to address the lack of desired features. Likewise on Twitter people have appropriated and repurposed retweets or replies for their own objectives. Additionally, both platforms have been used as spaces for innovative approaches to citizen journalism. These can then reveal how people negotiate the computational system that comprises the platform and how they find their own way within that system with sometimes unexpected outcomes. This is particularly the focus of chapter 6 and 7.

- Popular genres of expression. These are types of expression that are not necessarily novel or innovative, but that have been in one way or another become popular on the platform, as evidenced by widespread coverage, rich subcultures or substantial production of infrastructure such as wikis or external archives. These types of expression are especially interesting for a comparative analysis as an investigation of why popularity is or is not similar between platforms and how the nuances differ can be revealing about the relative affordances of the platforms. This is particularly the focus of chapter 7 and 8.

In the following two chapters, I begin my platform study and use the concepts discussed in this chapter to take a closer look at two online social platforms, Twitter and IRC. I begin my platform study by retracing the development of some of its features to identify how the platform, its materiality and affordances were developed,
what kind of factors played a role in that process, and how the affordances and particular features shaped and were shaped by the people using the platform.
4. Just setting up my twttr: a reconstruction of Twitter through its features

Twitter is one of the larger online social platforms of the 2010s; in 2017, 328 million people used the platform (Fiegerman, 2017, on CNN Tech), and many more will have seen tweets through their embedding on news sites. It has received much attention as a space of political campaigning and posturing, following for example Donald Trump’s election campaign in 2016, but is relevant in many spaces, from news to customer service to fan culture. Invariably, it is described as a ‘microblogging’ platform. The word ‘microblogging’ indicates two things; the messages are short and their purpose is blogging, or writing about one’s life. While the message length certainly is short—there is a strict, unavoidable limit of 280 (originally 140) characters per tweet—tweets can be about anything, and ‘blogging’ is not always a good label for them. Though many tweets are personal updates they are also used to publish various other types of content such as news announcements, weather reports or political commentary.

Twitter is a great example of how online social platforms can be co-created by the people who use the platform. On the one hand, it is a centralised platform, run by one entity—Twitter Inc.—that in principle has ultimate power over what people can and cannot do on the platform. On the other hand, there are many examples of features and aspects of Twitter’s design that originated in conventions and patterns that were invented and developed by users before there was any official support for them; examples of this are hashtags and @replies, now both important features of Twitter that have also been adopted by other platforms such as Instagram.

On a more general level, it is also interesting to consider how Twitter was developed as a software platform. While it clearly originates with a specific set of people, those people in turn were inspired and influenced by existing platforms and technologies. In this chapter, I will therefore both analyse how Twitter was developed initially, and how after it was introduced a number of key features were added based on how people used the platform, with particular attention to what factors were
influential in deciding what these features—#hashtags and @replies—would end up looking like.

In this chapter my goal is to provide an overall history of the platform, and subsequently a more focused analysis of two of Twitter’s major features, #hashtags and @replies. I am especially interested here in the “co-development of [Twitter’s] meanings, uses, and affordances” (Halavais 2013, p.29); the dynamic between Twitter as a company, making its own platform, and the people using the platform, who often provided early versions or other types of inspiration for what would later become an official Twitter feature.

In an analysis of this dynamic, Alex Halavais notes that “these appropriations often displaced social practices that better represented the diversity of users and their needs” (p.30). Other authors have also explored the effects of platforms’ adoption of this “user-led platform innovation” (Bruns, 2014, p.17); Noortje Marres notes that “individual users’ activities became less creative” after Twitter’s formalisation of retweeting (2017, p.96) while Stefanie Duguay notes that such formalisation makes it easy for people to share content “at the tap of a button” (2016, p.290).

This process of people ‘co-designing’ Twitter features together with the platform itself has, then, been covered in literature. What I intend to do here is to investigate the process more empirically. This approach is can then be contrasted with, but also considered an addition to, the work of e.g. Alex Havalais who in his 2013 analysis of Twitter describes the platform through both a general history and an additional focus on specific features: in his case @replies, retweets and #hashtags, features that “make Twitter what it is” (p.31). Such an analysis aligns well with the set-up of this thesis, a platform study seeking to investigate the dynamic between a platform’s development and what people do with the platform offered to them.

My goal in this chapter then is not to replicate Halavais’ research, but to investigate similar aspects of Twitter from a more historical perspective, and provide more detail where Halavais sometimes glances over the particulars, for example noting that “some have suggested that the hashtag does have an originator, Chris Messina” (p.36). Chris Messina’s role is, as I will describe in this chapter, more complicated than the label ‘originator’ might suggests, and a more comprehensive and empirical appraisal of the various factors contributing to the inception and eventual success of – among other
features – the hashtag can thus offer a valuable contribution to both earlier analysis of this theme as well as the overall objective of this thesis of thoroughly investigating the dynamic between a platform and the people using it.

4.1. The Conception of Twitter

Twitter’s lineage can be traced back to the ‘status’ features of platforms such as LiveJournal (a blogging platform) and chat applications like iChat (which allowed users to leave an ‘away message’). Twitter co-founder Jack Dorsey had been playing around with the idea of creating a platform based on sharing one’s personal status for years, and had the opportunity to develop the idea when he worked at Odeo, a company that was building a podcasting platform: a detailed account of Twitter’s founding can be found in New York Times journalist Nick Bilton’s 2013 book *Hatching Twitter*.

Perhaps the earliest trace of what would later become Twitter dates back to 2006, when Jack Dorsey shared a photo on Flickr, a platform for sharing pictures. The photo showed an interface sketch of what was then called ‘stat.us’, and was described as a mock-up of “a more ‘live’ LiveJournal. Real-time, up-to-date, from the road. Akin to updating your AIM status from wherever you are, and sharing it”. Dorsey traced the idea back to 2000, when he had signed up as one of LiveJournal’s early users. LiveJournal then was a fairly archetypical blogging platform, allowing users to publish short articles, akin to a diary. Though it in principle supported posts of arbitrary lengths, users were initially encouraged to and often did update their LiveJournals with relatively short posts, akin to status updates, with short descriptions of what they were doing at the time. A few years after the platform was first created, this was expanded upon by allowing users to explicitly attach a “mood”, “location” and “music” to their posts, which could be chosen from a pre-defined list but also filled in at will by the user.
Many platforms at the time had such “status” features, often used as a way of indicating that the user was currently not online or not available for contact. They were perhaps most typical for chat platforms, on which such a status was useful to see whether someone was available for conversation. Sometimes these statuses could be chosen from a predefined list; for example, ICQ, a popular early chat client, offered options such as “Available”, “Away” or “Do Not Disturb”. Other platforms allowed users to set their own message; on IRC, users could mark themselves as away, and add a custom message to that status to let others know what they were doing away from the keyboard.
There is a clear influence from such status features on chat platforms on Twitter. Dorsey himself cited AIM—AOL Instant Messenger—as an inspiration in his post on Flickr; a few years later in 2006, Twitter founder Biz Stone cited iChat, a chat application for Apple’s computers, as a factor in a blog post. Specifically, he refers to a screenshot by web designer in which a web designer lists all his recent iChat statuses with the comment that he “has racked up a story of [his] life over the past six months, in statuses”. Like tweets, these status messages are all short messages detailing personal information such as where the author is (“in San Francisco”), what they are doing (“I Voted! (and it totally sucked)”) or what sports team they are supporting (“go sox! wicked pissah! don’t be retahhhhded!”).

There is thus an obvious similarity with Twitter, but also with how some people had been using LiveJournal or similar platforms to keep their friends updated. LiveJournal allowed people to choose from a variety of designs for their journal, and among these designs were several fairly minimal layouts that showed posts chronologically, with little space in-between and little decoration apart from a timestamp. Such designs are abstractly very reminiscent of Twitter, essentially emulating a “timeline” like the one Twitter would build its platform on years later. LiveJournal also made it easy for people to embed their journal or latest updates within their own site, if they had one. Examples of this can be found through archived versions of the site’s front page, which in the early years of the platform provided a ‘showcase’ of featured blogs. For example, one LiveJournal user embedded a “feed” from LiveJournal on their personal website in 1999, showing their latest statuses along with a timestamp. These statuses were short messages describing what the author was doing at the time or what they were feeling, such as “Pool with Mike.”, “Still sick.. not doing anything..” or “I guess finally going to bed now.. [sic]”.

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9 I present these quotes from messages, mails, blogs and other such sources as they were originally posted or published, unless otherwise noted; they may thus contain spelling errors and grammatical mistakes.
LiveJournal and iChat are only two examples of status updates as a feature of a social platform—statuses were not unique to them, and had been a staple feature of such platforms for years. Nor was Twitter the first platform to be built solely on these statuses, without the baggage of, for example, a blog post. For example, the Finger protocol, standardised as early as 1977, is a technology that allows people within an organisation to share what they are working on at any time. Twitter-specific features such as a limited character limit for tweets or a real-time feed of updates were not part of the platform, but the Finger standard was functionally similar enough that attempts were made to repurpose it as a Twitter-style microblogging network in 2011, under the name of Thimbl; this project is however defunct as of 2016.

What made Twitter unique at the time it was introduced was the fact that it combined such statuses with a set of social networking features, making it easy for people to keep track of the statuses of a self-selected group of people. Of course, chat platforms like iChat also did this, being as they were reliant on a ‘contact list’ of people to talk to, but for most people its statuses were not central to the platform. LiveJournal did also offer a similar feature, with one of its pages being a combined blog of all ‘friends’, showing their latest posts in the order of posting. But even if LiveJournal afforded small status updates, it was still a blogging platform; small status updates might be mixed with long-form articles and anything in-between. Twitter, with its focus on short messages, offered a more easily scannable ‘feed’. It also had the
important advantage that it was one of the first such platforms to be accessible through mobile phones. Thus new tweets could be ‘pushed’ to the phones of people following the author whenever they were created; LiveJournal, on the other hand, was only accessible through a web browser and needed to be refreshed manually to check for new posts.

4.2. From TxtMob to Twitter

Twitter was originally heavily reliant on SMS messaging for infrastructure, and basic actions like creating an account were initially only possible through SMS. Smartphones were not yet widespread in 2006—the iPhone and the earliest Android-based phones would not be released until 2007 and 2008 respectively. Likewise, mobile internet was not widely available; while mobile internet access was slowly on the rise, smartphone apps and full-fledged internet access were not widely available yet, and platforms like MMS were still thought to be the ‘next big thing’ by some (see e.g. Hsu et al., 2006).

SMS was a method of communication that was available on virtually all mobile phones, and thus a good candidate for a method through which to make a platform available on-the-go. SMS had its limitations, such as a 160-character limit for messages. But in being available through mobile phones rather than only through web clients, Twitter had a leg up on competitors in that it was available in any situations in which a telephone was available, rather than only when internet access was available.

Yet Twitter was not alone in its reliance on SMS as a backbone of its online social platform. One of Odeo’s employees, Evan ‘Rabble’ Henshaw-Plath, had earlier worked on TxtMob, a mailing list-like SMS service that allowed people to join groups, and then receive all text messages sent to that group. According to a 2013 post by Henshaw-Plath on Hacker News, an internet forum for technology enthusiasts, “the idea of

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10 Multimedia Messaging Service: in essence, sms messages that could contain media content such as pictures or videos.
11 The 160-character limit is often cited as the source for Twitter’s own original 140-character tweet length limit (later raised to 280), as longer messages wouldn’t be able to be sent via sms. In fact, as detailed by early Twitter employee Dom Sagolla in a 2009 blog post, initially Twitter split up longer tweets over multiple sms messages, and sent them in parts. But this became expensive, as Twitter had to pay a charge for each sms sent, and it was decided to make one sms message the upper limit for tweets to decrease costs.
Twitter came from a hackday project of Jack [Dorsey], Noah Glass, and Florain Webber. But they were all aware of TxtMob as we’d done a presentation and evaluation of TxtMob a few days earlier”. There are some clear parallels between Twitter and TxtMob; both platforms were fully available through SMS messages, and focused on distributing text messages to a group of people rather than the typical SMS use case of 1-on-1 messaging. Both also offered a web interface through which messages could alternatively be sent and people or groups could be followed or subscribed to.

TxtMob was originally built as a tool for coordinating protests during party conventions for the 2004 presidential elections in the United States of America. The software was freely available and could be set up by anyone with the right hardware; it was distributed as a free software package under the GNU Public License. The software was initially developed by designer Tad Hirsch and the Institute for Applied Autonomy, an activist group; a similar tool named ‘RNC 2004 Text Alert Service’ was developed in parallel by activist Nathan Freitas and another activist group named the Ruckus Society (Hirsch, 2013). In the heavy media coverage of the elections especially TxtMob also received its share of attention, and the Ruckus Society “convened a weekend-long meeting of hackers in activists” to discuss the role of such technologies in activism. Being prominent figures in the activist hacking scene, Henshaw-Plath and another Odeo employee, Blaine Cook, were invited and “reviewed the TXTmob source code” (ibid.); while TxtMob would never take off beyond the activist circles within which it was already used, both Odeo employees kept in touch with Hirsch and occasionally contributed to the software.

Clearly, through Henshaw-Plath and Cook, there is a direct link from TxtMob to Twitter, but it would be unfair to say that the platforms are conceptually identical. The main difference between TxtMob and Twitter was perhaps that while TxtMob was group-based, Twitter was first and foremost based on individual status updates. OnTxtMob, one could join a group, and would then receive all messages sent to that group; conversely, a message sent to the group would be delivered to all members. On Twitter, the links between users were asymmetrical: other people could be ‘followed’, but this was a one-way action. Following someone would not automatically make them receive updates from you in turn. There was no need to join a specific group before starting to tweet, and any tweet could be seen by anyone that chose to follow
its author or checked their timeline; there was no concept of ‘groups’ to begin with, besides the abstract group of those people that one followed. Additionally, in the early days of Twitter, tweet volume was still low enough that a live time line of tweets by all users was feasible. This was another way to see updates from anyone, and a good way to find topics that were at that moment popular with Twitter users. As such, the scope of the platform was more global than TxtMob’s, which was always limited to whatever groups someone was a member of, and was never intended to provide a general feed of everything that happened on the platform.

That feature—a general overview of everything a group of people was sharing on the platform—was arguably the catalyst for Twitter’s first big surge in popularity in March 2007 during SXSW Interactive, an annual technology conference in Portland, Oregon. Twitter, at that point not used by more than a few hundred friends and relatives of its developers, had set up screens throughout the conference facilities that showed the tweets (then still called ‘tweets’) from select users present at the conference. A special command that made someone immediately follow a few “ambassador” accounts with useful info was also added. People who used the command would also have their own subsequent tweets show up on the screen (Williams, 2011). The displays and following feature were a success and were especially used by conference attendees to notify each other of the various parties that took place in the area. As Bilton describes it, “Soon bloggers at the conference were referring to the mass exodus from one place to the next as ‘flocking’” (2013). The event attracted many new users to the platform, and showed how well it could be used to share events, links and thoughts to like-minded people.

Twitter was still being fleshed out as a platform in those early stages and internally, there were differences over what type of activities the platform should focus on and how to do so. Particularly, there was disagreement among the founders on the kind of status Twitter was to encourage its users to share. Dorsey argued that the platform was primarily aimed at ‘personal’ status updates, akin to the ‘mood’ updates on LiveJournal, while Evan Williams, the owner of Odeo, felt the platform should encourage users to share what was happening around them. Nick Bilton describes how Dorsey and Williams had a dispute on what kind of tweet they would send to tell others about a house fire near them:
'If there’s a fire on the corner of the street and you Twitter about it, you’re not talking about your status during that fire,” Ev said during one of their unending discussions about the topic. “You’re Twittering: There’s a fire on the corner of Third Street and Market.”

“No. You’re talking about your status as you look at the fire,” Jack replied. “You’re updating your status to say: I’m watching a fire on the corner of Third Street and Market.’ (Bilton, 2013)

While the difference was subtle, it highlights two competing visions of what kind of content Twitter was to encourage its users to share. There are clear parallels here between the thoughts expressed here and by Dorsey and Williams’ respective background. Both were inspired by existing blogging sites, but differed in what kind of blogging they were partial to. Dorsey was, as he described in his Flickr post about his ideas for proto-Twitter, inspired by the very personally focused status updates on platforms like LiveJournal. His vision of Twitter was all about what he referred to as ‘status’: the things that are happening to you, right now. Williams on the other hand had, a few years earlier, found success as the founder of Blogger, one of the earliest large-scale weblogging platforms. LiveJournal, one of Dorsey’s inspirations, also was a weblogging platform, but explicitly encouraged a more ‘personal’ style of blogging through its features and how it was presented: the emphasis on short posts and features like the ‘currently listening to’ and ‘mood’ metadata that could be attached to a blog post. Blogger, on the other hand, was a more general purpose publishing platform, on which all kinds of blogs and forms of blogging existed.

Dorsey and Williams could be seen as representing these influences in their preference for the style of tweets their platform was to facilitate. Of course, in practice people could tweet whatever they wanted: there was no way for Twitter itself to directly control the tone and focus of a tweet. But certain styles of tweeting could be encouraged or discouraged through the design of the platform. The most obvious example of this is perhaps the writing prompt offered by Twitter’s website and apps, the ‘placeholder’ text that filled the field in which users could put their tweet to submit it to the site. Initially, when Twitter was not much more than purely a list of people’s statuses, the prompt had been “what’s your status?”, but this quickly gave way to the Dorsey-inspired “what are you doing?”, inviting the user to tell their
followers about what they themselves were currently doing. Later, when Dorsey had left the company and Williams had taken over as CEO, the text changed to “What’s happening?”, a more general question that invited users to tell their followers about anything—themselves or other people around them. In a blog post announcing the choice to no longer ask people what they were doing, Biz Stone wrote that “a birds-eye view of Twitter reveals that it’s not exclusively about these personal musings.” (2009a)

Surely, such a placeholder question has a relatively small effect on what people actually share through the platform, and depending on the interface, it may not even have been seen—when tweets were still mostly submitted through SMS, for instance, people using their phone would not have used any interface but the phone’s own, which obviously did not show the prompt. In his announcement, Stone did admit that they “[did not] expect this to change how anyone uses Twitter” (ibid.). And the popularity of Twitter as a tool to share the locations of parties at SXSW—a very ‘what’s happening’ type of content—shows that even when the interface was still built to invite personal status updates, this suggestion wasn’t necessarily taken up by the platforms users. But Twitter’s prompt is a good illustration of how the platforms’ own creators can have different visions for the platform that are echoed in its interfaces, even if it is not clear what the effect of such interface details are, if any.

That people are likely to not actually listen to what a platform’s creators want them to do is, perhaps, a fundamental rule of online social platforms: even though the platform may be built to afford a particular kind of behaviour or content, users may and will choose to do (very) different things with it. There are many examples of this. IRC was designed as a chat platform, but was also used by computer viruses to coordinate botnets. Tumblr was created as a platform for ‘tumblelogs’, or scrapbook-like weblogs, but a significant part of its content now consists of pornography. MySpace was created primarily as a social network like Hyves or Facebook, a place to talk to friends, but was for a while also one of the more important music sites, a sine qua non for beginning artists. Such appropriations may be fought, ignored or embraced, but they show how there can sometimes be a significant gap between a platform’s intentions on the one hand and the things users do with it on the other hand.
4.3. Case study: A history of the hashtag

A potent example of an appropriation that did not (initially) align with Twitter’s own ideas for the platform is the hashtag, keywords prefixed with the # character that can be included in tweets to ‘tag’, or label, them. While hashtags – “pragmatic communicative marker[s] that serve to coordinate discussions and establish more or less stable and consistent groups of contributors” (Burgess, 2011, p.2) – are an important part of Twitter as of 2018 and have been appropriated by other platforms (such as Instagram and Facebook) as well, they started out as a proposal by people using Twitter for a way to categorize their tweets; Twitter however had its own ideas and was slow to adopt the syntax. As the development of the hashtag and the process of adopting it as an ‘official’ Twitter feature provides a very useful insight into the process through which a social platform’s features emerge from an amalgamation of other platforms, users’ concerns and platform interests, I will trace its history briefly below.

The hashtag, or at least its syntax, was not original to Twitter: the "#" character had been used as a way to signify keywords among computer users for decades. Boyd et al., in a 2009 paper on Twitter conversational practices, claim that “the practice of using hashtags may stem from a history among computer programmers of prefacing specialized words with punctuation marks, such as $ and * for variables and pointers, or the # sign itself for identifying HTML anchor points”. While HTML is unlikely to be the source of hashtag syntax (as I will discuss next), it is true that the # sign is one of many examples of prefixes indicating that a word is a label or tag for something. A significant and related early example in online social platforms are the way the names of chat channels on IRC were signified (e.g. #pokemon would be the name of a channel about the Japanese video franchise); while channel names were not tags per se, they are similar in function as they provide a way to label a conversation with a certain theme. This is probably the first instance of this usage of the # character as a way to prefix such a label or tag; earlier, IRC channels had been denoted by numbers, and later by the + character, until the # was settled on as a prefix in 1990. According to programmer Chris Messina, who first proposed using hashtags on Twitter, the IRC channel naming convention was a direct inspiration for his syntax (Messina, 2009).
As an illustration of how small platform design decisions can have impact in another context decades later, it is useful to briefly discuss why the ‘#’ character—which persists today—was chosen as a prefix in the early nineties. Using the # character as a prefix was a more or less arbitrary choice. That channel names needed a prefix at all was a result of how IRC handled changes to people’s ‘mode’, or the privileges they held, like the ability to remove people from a channel or to talk at all. Like people, channels could also have a ‘mode’, which indicated various settings such as whether a channel could be joined by anyone or just those who knew its password. There was one command to change both the mode of a person and a channel; this did not lead to ambiguous commands as nicknames could not start with a number, and channels could not contain non-numeric characters. This worked well until a feature was introduced that allowed people to open channels with arbitrary names. To make it possible to distinguish between channels and nicknames, channels with a text name were prefixed with ‘+’. But due to technical limitations, only one +channel could be joined at the time. As an extension of this functionality, a new type of channel was introduced, and up to ten of these could be joined simultaneously. #, a character that was otherwise unused and also could not be the first character of someone’s nickname, was used to differentiate these channels from the more limited +channels. This was intended to be a temporary solution—in an alt.irc news group post dated October 1991\(^{12}\), an IRC developer remarked that

\[ # - \text{Channels and Numeric Channels are going. bang - they're dead.} \]
\[ \text{channels were only supposed to be temporary and numeric channels} \]
\[ \text{just introduce more special conditions which the server has to}\]
\[ \text{handle. 2.7 will silently ignore them - they will be created on a 2.7}\]
\[ \text{server but they will not be passed on}\]

However, the syntax and new channel type proved popular enough that it was kept and +channels and numeric channels, which both had various limitations, slowly became less popular instead. Though not without opposition; one IRC user, for

\[^{12}\text{See Appendix A for more information on the archives of this newsgroup that were consulted for this thesis.}\]
example, sent the following eulogy for numeric channels to the Usenet newsgroup
*alt.irc*:

I don't know about anyone else, but I personally LIKED the numeric channels. It's sorta like losing an old friend. *sigh* wait wait...I can remember the time when there were ONLY numeric channels.....heck, then again, I can also remember the time when the number of irc servers was in single digits... ah....the good old days....when IRC was fun and easy and there weren't any of these silly op-fights. *sigh* I guess the good things never last.

Why the # character, specifically, was chosen as a prefix is unclear; it was used in other IRC contexts, such as as a prefix for administrative announcements, but it is not apparent from the surviving development discussion why it was used for channel names as well.

Twitter, over a decade later, was the first platform to use IRC’s more or less accidental channel name syntax as a way to signify a tag, and was unique in how it made tags part of content of a tweet, rather than a separate bit of metadata. But more generally, as a practice ‘tagging’ was very much a central feature of many ‘web 2.0’ platforms at the time Twitter became popular. Platforms like Flickr, a photo sharing site, and del.icio.us, a place where people could save their online bookmarks, prominently used tagging to make it easy for their users to find certain types of content. These tags were often explicit metadata, bits of data connected to the respective content but separate in both the user interface and the underlying data structure. For example, Flickr showed a vertical list of tags under a photo, while del.icio.us displayed a horizontal list of keywords under a link’s title. Twitter initially had no such features, prompting users to brainstorm about how a similar facility could be added to that platform as well. The first recorded usage of the Twitter-specific #syntax was by programmer Chris Messina on 23 August 2007, in a tweet:

how do you feel about using # (pound) for groups. As in #barcamp [msg]?

Two days later, Messina posted a more elaborate article on his own blog describing his thoughts on how tweets could be grouped and categorised in a more detailed way.
A number of factors informed his proposal of using this precise syntax, such as the fact that the # character “works consistently on cell phones” as opposed to other characters—at this point in time, sms messaging was still an important method of interacting with Twitter. He also mentions a number of other platforms that informed his thoughts; IRC and Flickr are mentioned, for example, with the # prefix explicitly linked to IRC’s channel naming syntax.

![Figure 4. Flickr, circa 2006; the list of tags is displayed next to the comments.](image)

![Figure 5. del.icio.us, circa April 2006; tags are displayed below the link title.](image)
Another platform that inspired Messina’s proposal was Jaiku, a Finnish microblogging platform that was acquired by Google in 2007 and closed in 2012. Jaiku allowed people to create ‘channels’ that could contain ‘jaikus’ (the platforms’ name for its tweet-like messages) but also content from external sources like blogs, news feeds or even Twitter streams. Jaiku’s channels were overview pages that showed all content linked to a particular tag or theme. Instead of showing up in the body of a jaiku—like hashtags show up in the body of tweets—Jaiku’s channel names would show up listed separately from a jaiku’s content and could be clicked on to view other content within the channel. Perhaps inspired by fellow Finnish platform IRC, Jaiku chose to denote channel names with the # prefix.

Jaiku, del.icio.us and Flickr were far from the only platforms on which various forms of tagging and categorizing were a central feature. Multiple platforms were built on or inspired by the ‘folksonomy’ concept, a paradigm in which a platform’s own users categorised and indexed content on that platform by adding tags or other metadata to them. ‘Social bookmarking’ sites like del.icio.us and StumbleUpon heavily relied on crowdsourcing the categorisation of their content, with people tagging content and discovering similar content tagged by other users in turn. Flickr’s tags were also used to construct overview pages where visitors could see an up-to-date slideshow of

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13 A portmanteau of ‘folks’ and ‘taxonomy’; a taxonomy created by folks, i.e. people using the platform
recent photos of, for example, skyscrapers or beach scenes. In a 2008 review of the developments surrounding the folksonomy and ‘social tagging’, Jennifer Trant describes 2005 as “the year tags went mainstream”, citing media attention and the increasing popularity of these social bookmarking platforms. Though Trant’s analysis discusses various platforms and their take on tagging, Twitter is not mentioned, perhaps because it had only just been introduced at the time of writing. But it is clear that, at the time, tagging existed in various forms, and was an important part of many online social platforms.

In that light, it is not very surprising that sooner or later Twitter would adopt a similar categorisation feature, and this is especially apparent in the hashtag’s early usage. As originally proposed, it was supposed to be used to create clearly distinct categories of tweets, much like Jaiku’s channels. Note that Messina’s tweet-based proposal explicitly discussed “using # (pound) for groups” (emphasis added)—his proposed syntax was not necessarily intended to be used for the loose, implicit style of labelling that hashtags would eventually be used for.14 Messina’s proposal was a contribution to a wider discussion about ‘groups’ or ‘categories’ on Twitter; only a few weeks before, Jason Goldman, a Twitter representative, mentioned that such a feature was “at the top of [their] requested feature list” on customer service platform GetSatisfaction (Goldman, 2007). There also was a considerable overlap between Twitter’s initial user base, which grew from Silicon Valley startup culture and the crowd at the SXSW technology conference, and users of folksonomy-based sites such as del.icio.us and Jaiku. It is therefore reasonable to expect that tagging would have been part of many early Twitter users’ social media practice.

Indeed, informal tagging was already happening before the #hashtag syntax became widely adopted; at the SXSW conference, visitors prefixed their tweets with “sxsw” to make them easier to find for others (Messina, 2007) and the special “join sxsw” sms command that Twitter added for that conference gives the impression of a precursor to a feature that would allow joining other things than just ‘sxsw’. Such an extension of the feature never materialised and the “join sxsw” command was only active during the conference. But the popularity of such features indicates that there

14 The word ‘hash tag’ (then still with a space) was first used by consultant Stowe Boyd, in a blog post discussing Messina’s proposals; Messina consistently called them ‘channels’.
was a desire for better facilities through which to reach a particular demographic with
tweets, e.g. people visiting the same conference or talking about the same topic.
Indeed, the #prefix syntax was not the only method proposed for grouping tweets; a
more abstract structure of “groups” one could join to receive all tweets explicitly sent
to that group (reminiscent of the original TxtMob concept) was discussed and
Goldman’s post on GetSatisfaction even mentioned a possible syntax for such a
feature, indicating that the feature was being considered by Twitter itself as well.

The platform was still very much based on sms messaging at this point in time and
both Goldman’s and Messina’s proposals seem to have had texting commands in mind
when describing possible syntaxes. Messina’s blog post contained a list of commands
that could have been used to follow and unfollow specific hashtags (or channels, as
Messina called them, inspired by IRC and Jaiku), which also gives a good impression of
the functionality he envisioned the feature to make possible:

follow #tag: subscribe to all updates tagged with #tag
follow username#tag: subscribe to all updates tagged with #tag from
a specific user
leave #tag: unsubscribe to a tag; you will still get updates with this
tag from your friends
leave username#tag: unsubscribe to a specific from a specific user
remove #tag: completely remove all incoming posts tagged with
#tag, even from your friends
#tag message: creates a status in the #tag channel
#tag !message: creates a status that is only visible to people
subscribed to channel tag #tag (Messina, 2007)

The list of commands also implies that hashtags would always be put at the
beginning of a tweet (“#tag message”), the # essentially being a very short command.
Using a single character to denote tags was therefore not just a nod to existing
platforms, but also a way to keep the texts sent to Twitter as short as possible, which
was desirable considering Twitter’s reliance on relatively cumbersome SMS interfaces
and the character limit of tweets. Other text commands were also short words
(‘follow’, ‘track’, ‘stop’) or one-character acronyms (‘d’ for direct messages, or the
proposed ‘g’ for group messages).
Any new commands—such as using # as a command to post to groups—would have required Twitter to implement support for them before they could be used. But in their basic form, hashtags were a simple way of categorizing tweets that, crucially, did not require Twitter’s blessing; people could and did start using them immediately after Messina’s original proposal, and they provided an easy way of grouping tweets visually or via search features even without dedicated features. And given its usage at multiple other platforms, old and new, the #prefix was not just a way of keeping commands as brief as possible but also a good candidate for making such tags more obvious and less likely to be confused (by both people and Twitter’s internal algorithms) with ordinary text.

Twitter’s creators were not impressed, initially: they found the #syntax ”too harsh” and ”for nerds” when Messina spontaneously decided to visited the Twitter office to discuss how it could be supported officially. Messina was “friends with many Twitter employees” (Bilton 2013), which explains why he had some sort of access to Twitter’s offices, though this attempt proved fruitless, as Messina’s pitch was dismissed by Williams and Stone out-of-hand. Instead of adopting Messina’s ideas, they planned to implement a more comprehensive and user-friendly tagging mechanism at a later time (Bilton, 2013) or categorise tweets automatically via machine learning (Gannes, 2010). But the new syntax had been picked up by an increasing number of people since Messina first used it, and while Twitter mostly ignored the feature as far as official support was concerned, hashtags proved popular in spite of this; in a ten-day period in 2009, 315,000 distinct hashtags were used, the most popular ones being used by thousands of people (Sadikov and Martinez, 2009, p.3).

Eventually, ignoring gave way to embracing and in 2009 hashtags were made clickable in tweets, so people could easily look up other tweets containing the same tag. While there never was an official announcement of support, technology blog TechCrunch reported that “you may have noticed that Twitter has started hyperlinking hashtags” on 2 July 2009. It should be noted that Twitter already offered features to show only tweets containing particular phrases (such as hashtags) before this, via various search features and text commands—making them clickable merely made this easier, though it had a positive side-effect of making hashtags more visible as well, and making it clear that they were now officially part of Twitter’s platform and interfaces.
Clicking is still the only way hashtags can be interacted with on Twitter; ways to ‘follow’ hashtags explicitly never materialised and neither Messina’s proposal nor Goldman’s examples of a ‘group’ syntax were ever made available to Twitter’s users. In 2009, Twitter did introduce ‘lists’, a feature that allowed people to make lists containing people of their choice, with an overview page showing the latest tweets by the people on that list; but there are important differences between lists and groups, such as that lists can only contain authors, not individual tweets.

Hashtags were also attractive from a technical perspective. Outwardly, the tags were not metadata like they were on Flickr and various social bookmarking sites; they were part of a tweet’s body, and adding them simply meant including them as part of the tweet’s text. This is especially relevant because earlier in 2007, Twitter had introduced a feature called ‘Track’, which allowed people to receive all tweets containing a particular phrase on their phone. Because hashtags were, in essence, phrases in a tweet, they worked very well with Track, as people could choose to Track a particular hashtag and easily receive all tweets referring to it. Hashtags offered a more or less standardised way of referring to things, which was compounded by the network effect—popular hashtags would be seen by people, who would then use the same hashtag to ‘join the conversation’. As such, hashtags worked quite well with Twitter’s features at the time, which would have given them an advantage over categorizing tweets by adding explicit metadata to them—something that would have meant more work adapting existing features or adding new ones. Tracking was a mobile-only feature—the only way to enable it was to send an sms message containing a ‘track’ command to Twitter—and perhaps partly due to the decreasing importance of SMS messaging as infrastructure the feature was removed around the end of 2009.\(^{15}\) By that time Twitter’s search features and the fact that hashtags were made clickable and searchable provided an alternate way of keeping track of them.

Hashtags as they were appropriated by users in the end—as part of the tweet body rather than a message prefix or command—also fit into a wider discussion about ‘microformats’ that was going on at the time. Microformats were various proposals to make websites easier to index for computers while simultaneously keeping the human

\(^{15}\) Again, there was no explicit announcement of this – but Twitter’s own help pages cease mentioning the feature around this time.
viewer in mind in how the website was displayed. In the words of the Microformats wiki, where the various formats are officially documented, “microformats intend to solve simpler problems first by adapting to current behaviours and usage patterns”. An example is putting HTML tags around the various metadata-like parts of a review (title of what is being reviewed, final score, author, et cetera). These tags would then be invisible to the viewer, showing them an ordinary review, while still indicating to any search engine or crawler that it was a specific kind of information that could be indexed and archived. While Twitter’s hashtags are not invisibly marked as such, the # is relatively innocuous, and the fact that hashtags can be part of a running text means they can be incorporated in an ordinary message while still affording search engines to easily index the tweets as linking to a particular tag. As such they are very microformat-like, fitting in well with the contemporary technological trends in how to mark up metadata. And, as blogger Stephanie Booth mentioned in response to Messina’s proposal, “here there is an extra incentive to do it: space is limited” (2007).

The hashtag is only one example of the many Twitter features that are clearly preceded by existing usage patterns. Before pictures could be attached to tweets, services like Twitpic were widely used by people to upload pictures and then link to them in tweets; such services often offered their own interfaces and apps that allowed sending a tweet from that interface with the picture embedded. Other types of content Twitter allows as attachments followed a similar process; videos and polls were often hosted on external sites and then linked to in Tweets before Twitter allowed them to be embedded within a tweet ‘natively’. Such features can easily be seen as Twitter reacting to a demand; clearly the platform already affords sharing such types of content through simple hyperlinks, and as this happens more often it is increasingly useful for Twitter to make these into full-fledged features of its platform, with their own place in the platform’s interfaces.

It should be noted that such features are ‘replacements’ or implementations of already existing usage patterns, and not responses to demands for features that are wholly inexistent; the hashtag was being used by many already, and solved a problem Twitter had not yet found a good solution for. But in cases where there was a less clear path from user proposal to officially supported feature, Twitter has often taken its time before requests from people using the site were addressed. In 2014, an alt-right
conspiracy theory dubbed ‘GamerGate’ brought game journalists and developers head-to-head with players over the presumed feminist bias and cronyism in the games industry. The debate, much of which took place on Twitter, was aggressive, and some prominent people involved in the debate had their personal data shared via tweets, inviting threats and harassment. Following this and other instances of widespread harassment, people called upon Twitter to provide better tools to address and report such harassment. While there were limited facilities for blocking or reporting accounts, Twitter was widely criticised for not providing facilities to block harassment or deal with it in other ways. While it did introduce limited features to filter out ‘low-quality’ tweets later in 2016 and 2017, this presents a contrast with the quick pace at which even hashtags, or later @mentions, were appropriated by Twitter.

4.4. Case study: Mentions—the role of the @ character

A prominent Twitter feature with a similar history is the syntax through which tweets can be addressed to specific people—by mentioning their user name in a tweet, prefixed by an @ character. This too can be traced back to older messaging conventions, and syntax common among computer enthusiasts: traditionally pronounced as “at”, the @ character was a popular way to address people in computer text messages. It had also been a way of identifying location for decades, virtual (such as in e-mail addresses, where the part after @ denotes the server address) or real (such as in the phrase “@ home”). It quickly crossed over to Twitter, first appearing in this tweet:

@ buzz - you broke your thumb and youre still twittering? that's some serious devotion

Unlike the hashtag, there was no conscious effort to invent a new syntax or feature here, and no one starting point where the syntax was “invented” or re-appropriated

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16 For a more complete account of ‘GamerGate’ and the social media harassment that formed a large part of it, see e.g. Game Changers (2016) by Golding and van Deventer; the relation between GamerGate and Twitter is also discussed in more detail in chapter 6.

17 The character’s origins are in accounting and invoicing; e.g. “20 apples @ 10p”
from various existing practices: using @ in text messages was an existing practice and there are earlier examples of Tweets were the character was used to indicate a location; the very first time it was used in this way was in a tweet by co-founder Evan Williams half a year earlier when describing where he was eating burritos:

    breakfast burrito @ herbivore. Mm!

But using it as a prefix for a Twitter user’s name to directly address them had not been done before. In this case Twitter was happy to embrace the new syntax and quick to do so, perhaps because it was more or less an existing convention, and one that immediately became popular. Only a few months after it was first used, in November 2006, a page on which people could keep track of their ‘mentions’ was added to the website. The feature would be fine-tuned over the years, and the visibility of such mentions in timelines varied depending on user settings and Twitter affordances.

Some of these new features, especially those affecting the visibility of @mentions, effectively made Twitter feel like it had two ‘levels’ of visibility: one where anything was visible to anyone, and one where people could have conversations others couldn’t see. While the exact settings have varied, in general direct replies to people have been hidden from anyone but the recipient and mutual followers. As such, some authors describe such replies or mentions as “private” (see e.g. Sriram et al., 2010). While this is true at face value, these conversations still show up in search results, or when someone decides to take a closer look at someone’s timeline, on which all tweets appear. They are therefore anything but private, and are simply slightly more hidden by the interface. Twitter does provide a method of sending private messages, called Direct Messages, but these messages are truly private. As such, they are not part of whatever persona someone presents through Twitter; they do not show up on someone’s timeline or profile, and cannot be viewed without being part of the conversation.

Twitter has changed the way @mentions are displayed to users multiple times over the years—this is a contrast to #hashtags, which are comparatively simpler and have seen relatively little change since they were first embraced by the platform. Mentions were officially adopted as a native Twitter feature by making them ‘clickable’ and adding a page on which they could be kept track of in early 2007, after usage had first
grown organically. Initially an @mention was just that, one person mentioning another, without any effect on who would be able to see the tweet. In 2008, Twitter founder and then-CEO Evan Williams wrote a blog post on the official Twitter blog announcing that they had added a new option to the Twitter web interface, allowing people to choose whether they would see other people’s @mentions in their timeline or not. Before this, all @mentions would be visible to everyone, and were in that respect indistinguishable from ordinary tweets. Later, such Tweets would be hidden from anyone but the recipient, and people following both the sender and recipient, by default (in May 2009). Later again, the platform started keeping track of whether a tweet containing a @mention was a reply to a specific tweet, or an instance of someone being mentioned out of the blue (at the end of 2009).

But the feature would always be an uneasy fit with Twitter’s ostensibly public ‘timelines’, which is perhaps illustrated by the ongoing changes to how such mentions are shown or hidden in its various interfaces. Later in 2009, the setting that allowed people to view all mentions was removed again, with Twitter spokesperson Biz Stone calling it an “undesirable and confusing option” (2009b), based on usage patterns they had observed and feedback they had received. @mentions would only be visible to recipients and mutual followers. Then later, in 2016, @mentions were made visible to anyone again, as they had been originally, with the caveat that those that were explicitly sent as a reply to other people, through the Twitter clients’ built-in ‘reply’ button, would still only be visible to the recipient and mutual followers per the previous setting.

This was complicated by the fact that even if a tweet started with a @mention, it was not always intended to only reach whoever was mentioned. It became a convention to circumvent Twitter’s ‘hiding’ of a tweet by prefixing the @ with another character, usually a period (.), so the tweet that started with addressing someone would not trigger the mechanism that hid the tweet from non-recipients; something that was useful when the tweet was not actually a reply, or was intended as an ‘open letter’, a reply intended to make a statement that others should also see. While this is a clever way of subverting Twitter’s display algorithm, this is not a documented Twitter feature—Twitter does not mention it on its help pages and the various buttons that allow replying to a tweet do not offer the option to insert a period in front of the reply;
thus, one has to hear of it elsewhere or see someone else using it to understand that they can write a ‘global’ reply this way.

Perhaps in an attempt to formalize this practice, in 2016 Twitter announced that henceforth tweets that started with a @ but were not explicitly marked as replies to another tweet would be displayed to everyone rather than just recipients and mutual followers, mimicking what previously required inserting a leading period. Thus the same tweet will be displayed differently depending on whether it was written as a ‘stand-alone tweet’ or through the reply buttons placed under each tweet. As this difference is not mentioned in Twitter’s interfaces, people are clearly expected to find this intuitive; yet Twitter has several pages in its help section detailing to whom specific types of tweets are visible and why, indicating that people may still be confused about how to make sure their tweet is visible to its intended audience. Perhaps this is especially confusing because in essence, Twitter attempts to guess the intent behind a tweet; is it meant to be seen by everyone, or just by the people mentioned in it? This distinction is left up to an algorithm, so unless that algorithm is infallible—which is unlikely—tweets may still not be shown to those the author intends them to be seen by.

This confusion and uncertainty about how to best display @mentions highlights how the platform was not designed with the feature in mind, and it was more or less bolted on later, based on usage patterns and not as part of a clear plan by the platforms’ designers. On the one hand it was clearly a useful and popular feature for Twitter users, and it allowed something that had not been possible before: sending a message to a specific person via a tweet. On the other hand it clashed with the public nature of Twitter’s timeline feeds. Such replies were not necessarily always meant by their authors to be private initially, but the volume of tweets addressed at a particular person instead of the public at large meant that it quickly became necessary to make them less visible to keep one’s timeline manageable. This meant compromising one of Twitter’s key characteristics, its singular focus on simple timelines and reverse-chronological lists of tweets sent by a particular person or group of people. This is also exemplified by another mentions-related feature. Tweets that are replies to each other (‘chains’) are grouped together on timelines, which makes the flow of a Twitter-based conversation clearer but as a side-effect makes the timeline less chronological.
4.5. The tension between a platform and the people on it

Looking back at the initial development of Twitter, conversations and replies were not part of the core concept. Especially when considering Jack Dorsey’s vision of a platform built on microblog-like updates about someone’s personal status, that concept was essentially one-directional; people would use Twitter to let others know what their status was, without an expectation that others would react to that status. Direct Messages, which were part of Twitter from very early on, were perhaps meant to afford conversations and reactions to tweets; but the tweets themselves were primarily a way for people to post about themselves. Direct messages originally were the only way to interact with a specific person on Twitter, rather than with all followers at once; and the two modes of interaction were completely separate, with direct messages being private and tweets being public, and no overlap between the two; and thus no risk of one getting in the way of the other, as would happen with replies.

Clearly, instead of using direct messages, almost immediately people started using tweets to react to other tweets instead; the first @reply came only months after the platform had been created, before it had achieved any kind of large-scale adoption, and it is likely that people talked to each other via tweets before there was a standardised syntax before it as well. Various factors are likely to have informed this preference for tweet-based replies over using a separate feature. Given the sms-based interface, from the point of view of someone composing a message, sending a private message only differed from sending an @reply in one way. While an @reply started with an @-sign followed by a username, a direct message started with a D, followed by a space, followed by the username. There was no contextual interface on a simple mobile phone—no website or app surrounding the given command that indicated where the message would end up or who would be able to see it. Thus the very strict difference between direct messages and @replies that is visible in Twitter’s current interfaces—with a separate tab or page for the more private direct messages—did not exist yet. Additionally, using @ required one less character and also gave more freedom; people could be mentioned at the start of a message, but also later in the
text if that made more sense for the given contents. And they could be used to address multiple people at once, or write the Twitter equivalent of an ‘open letter’: varieties of replies that were not possible through the one-to-one direct messages.18

None of these factors are likely to have tipped the scales on their own, but taken together it is clear that in many cases ordinary tweets afforded the kind of interaction people wanted from the platform just as well or better than direct messages. However, tweets were not consciously designed to be used for this kind of interaction, which explains why Twitter has continued trouble reconciling the concept of a public, reverse-chronological timeline with the various ways people have appropriated reply functionality. This can be contrasted with Twitter’s support of hashtags; a feature that has seen comparatively little change since it was introduced by Twitter. Both the hashtag and @replies were existing usage patterns that were adopted—in modified form—by Twitter. But hashtags did not clash with existing features—Twitter had ideas of their own about groups and categorisation, but these were not yet introduced to the platform when hashtags were first used, and not necessarily incompatible with them. And hashtags do not change the flow of conversation, while replies do—it is often clearer and desirable to group tweets that are replies to each other, but this clashes with the otherwise reverse-chronological order of a timeline, for example when other tweets were posted after the first tweet in a conversation but before the second one. Tweets with hashtags are not explicitly linked to each other except by the fact that they mention the same #-prefixed phrase, and thus present no such problem, as there is no need to alter the order in which tweets are displayed based on which hashtags they contain.

This highlights the complicated dynamic between, on the one hand, a strong vision from the platform’s creator about what kind of platform it should be and how its content should be presented; and on the other hand, their willingness to adopt and appropriate usage patterns from people who may be using the platform for other things. This is especially apparent with @replies as they overlapped with an existing Twitter feature (direct messages), and because tweet-based conversations exist in a sphere that is neither public nor private; by using tweets, conversation partners imply

18 Twitter would allow multiple recipients for Direct Messages only in 2015, and even then only those explicitly marked as such will see the message.
that the conversation is not so sensitive that it should be confined to the locked-down context of direct messages. Yet such conversations, even if they are public, will often not be especially interesting to people not included in it; but to those who are part of it, it is more helpful to group the tweets that are part of it together. Taken together, such considerations present a complicated set of trade-offs Twitter has to contend with. The platform eventually arrived at a set of rules, not all of which are intuitive or apparent, that make tweets visible or invisible depending on a partly hidden set of variables. Given the fact that changes to this arrangement have come at a steady pace over the years, it is clear that there is an ongoing struggle between the original concept of the platform and the ways people have appropriated it, at least in this aspect.

The analysis of both hashtags and replies thus highlights how introducing new features based on existing usage patterns is a complicated process. Furthermore, it shows how both features—which are now fundamental to Twitter’s platform—were influenced by a variety of factors, among which are older platforms such as IRC and Jaiku. Clearly, Twitter’s current design is very much the result of an ongoing process—an emergence, or Entstehung, in genealogical terms—that is informed not just by Twitter’s own vision and ideas but by what the people using it do, and by the various platforms that Twitter shares the internet with. Parts of the platform’s early infrastructure—with a heavy emphasis on sms messaging—has strong links toTxtMob; its design, a simple list of statuses, can be traced back to LiveJournal and a variety of chat apps; the kind of content it was meant to stimulate has parallels with the respective curriculum vitaes of the platform’s founders.

Individual features like hashtags and @replies, which have become a very important part of Twitter, also have clear roots in both user efforts to use tweets for unplanned types of discourse, and also in older platforms that offered similar functionality. This is not to say that Twitter has not been innovative itself, or that it contains no original ideas. There are plenty of Twitter features that are unique to the platform and its appropriation of outside influences constitutes something that, given the popularity of the platform, is attractive. And anyhow the combination of features in itself forms a unique social platform. But seen from a historical perspective, Twitter is very much a product of its time—based on technology that existed in 2007, with a prominent place
for a folksonomy-like feature such as tagging, and sms-based constraints that continue to be a factor even if few people use sms to tweet anymore. And as these affordances continue to shape the kind of content people share on Twitter, it is not unreasonable to say that the early 2000’s technological landscape continues to echo through in contemporary discourse on the platform.

But Twitter, of course, had a very particular set of influences and its own trajectory of development. Whether the way these factors influenced the platform’s eventual design and feature set can also be seen in other platforms remains the question; therefore, in the next chapter I will take a look at how the development of IRC—one of Twitter’s many predecessors—took shape, and whether similar dynamics can be distinguished in that platform’s inception.
5. Do one thing, and do it well: Internet Relay Chat

IRC is in many ways something of an anachronism. Most modern social platforms like Twitter neatly fit the mould of the “social network site” (cf. boyd and Ellison, 2007), with an emphasis on explicit connections between users (“a crucial component of SNSs”, ibid.) and personal profiles. IRC has none of these features. It is in essence a collection of chat rooms, or ‘channels’ in IRC parlance, that can be joined at will to discuss whatever the theme of that channel is. In principle, people share little else about themselves than their preferred nickname; any further personal information would be disseminated through conversation, as the platform does not require logging in or creating a profile. Furthermore, the platform is decentralised, and open: anyone can start their own IRC network and write their own client. This again is a contrast with most modern-day social platforms, which are tightly controlled, run by one central entity and only available through an officially sanctioned constellation of interfaces.

For a large part, these differences owe to IRC’s age; it was founded in 1988, and much of its design reflects that era. Consequently, the relationship between IRC and the people using it is in some aspects very different than the relation between, for instance, Twitter and the people using that platform. In this chapter, I will revisit IRC’s development, reflecting on the choices that were made in the design of the platform, the effects of these choices on the platform and the agency of its users, and what this means for what people can do with the platform.

IRC’s history has been covered in multiple works and by many authors. This is not surprising: as one of the most prominent communication platforms around the turn of the century, it has drawn attention from many scholars as an important factor in early internet culture. As early as 1991, Elizabeth Reid wrote about IRC communities and their idiosyncrasies; in her discussion of IRC, she focused on the ‘structure’ of the platform, a term with which she refers to what in more recent research would probably be referred to as affordances; the various features that IRC has that enable and encourage a particular mode of communication such as identity play, e.g. through the enforcement of unique nicknames and the anonymity or pseudonymity inherent to the platform (Reid 1991, n.p.).
Roughly a decade later, Nancy Baym would revisit IRC as a platform for early online fan culture in *Tune In, Log On*: comparing it to fan cultures on Usenet, Baym focuses on the relative closedness and insularity of many IRC channels as compared to the more open and welcoming communities found on Usenet (2000, p.184). From a more platform studies-oriented perspective, Guillaume Latzko-Toth has discussed the development of IRC as a “co-construction of a sociotechnical communication device” (2010, n.p.), focusing on the social dynamics of the development process of the platform, with particular attention to the back-and-forth between developers and people using the platform in this process. More recently, Gabriella Coleman discusses IRC as an important part of a broader ‘hacker culture’; IRC here serves as a tool for hackers to coordinate software development but also as a place to develop a ‘hacker identity’ in juxtaposition to “users” (p.110).

My goal with this chapter is to fit in between these analyses, while simultaneously using them as a starting point. Reid’s foundational analysis has been influential but, having been written in 1991, it is limited by a focus on the very first years of IRC only, and does not discuss some of the platform’s more unique trappings (such as its capacity of supporting chat bots). Latzko-Toth presents an excellent investigation of the development of IRC but focuses primarily on the dynamics of specific controversies in the history of the platform (2010, p.87) and is less interested in the general context and early history of the platform. Coleman finally provides a very thorough account of the broader culture within which IRC was developed and served as a meeting point and key tool, but is comparatively far less focused on IRC as a platform in itself. Furthermore, none of these analyses explore IRC’s earliest origins in detail, while these are – as I will discuss – foundational to some of the platform’s key features, such as its channel-based setup and its decentralised structure.

While existing literature thus covers a relatively wide area when it comes to IRC, and will serve as important supporting material, but my goal here is an investigation of IRC as a platform, with a particular focus on the historical context in which it was developed, and how it was shaped by both earlier platforms and the cultural context within it was conceived. It is therefore similar in set-up to the previous chapter on

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19 Transl. from French (the language of Latzko-Toth’s thesis): “La co-construction d’un dispositif sociotechnique de communication” (2010, n.p.)
Twitter; I discuss the initial development of the platform as well as a number of key features, with a particular interest for the broader circumstances that enabled the development of the platform itself and these features. I start the chapter with a discussion of IRC’s earliest origins as an alternative to BITNEY Relay chat. Subsequently I discuss its status as a platform, as the BITNET-inspired design of IRC is decentralised and does not immediately fit within more modern ideas of online platforms. I then discuss a number of features and how the development of these features and others was enabled by contemporary software development philosophies. This then presents a platform history that serves as the first component of the broader platform study this thesis is concerned with.

5.1. Passing the baton: from BITNET to Internet

IRC was for the largest part inspired by a similar chat network, BITNET Relay Chat. BITNET was a network like the Internet, but separate from it, initially set up to connect colleges and universities in the United States of America. Later the network was extended to include European academic networks too, and subsequently several other international networks as well.

BITNET can be described as a ‘store-and-forward’ network: information would be sent to a computer, which would then forward it to another computer as one became available, and so on, until a message would reach its intended destination. Group chat was possible through this network, by having one computer as a ‘host’ to which other computers would connect; the host would then distribute messages to all connected computers. This eventually brought trouble due to the low bandwidth of networks at the time; as each message had to be sent to each recipient separately, popular chats with multiple users quickly hogged all available bandwidth on a BITNET connection. BITNET Relay Chat was then set up to make group chat possible while leaving enough bandwidth for more ‘important’ activity such as sharing files and research data.

Relay chat was not just one monolithic chat group. Users could choose a channel in which to chat, which could be either public or private; a list of public channels was available through a dedicated command that could be sent to the chat. Akin to radio
channels, chat channels had a number and users could only be active in one at a time (indeed, an undated but likely contemporary FAQ\textsuperscript{20} by Phillips, et al. about the network described it as “similar in function to a CB radio network”). Other commands allowed inviting people to otherwise private channels, showing network statistics, or looking up rudimentary personal information such as through which network someone was connected. A curious command was the ‘quiesce’ feature, which allowed relay administrators to suspend all chat activity and was implemented due to complaints that chat activity was using a significant portion of the network’s resources, despite measures taken to limit this effect of chat. Exemplary is this complaint about an early version of BITNET Chat from 1985 by Henry Nussbacher\textsuperscript{21}, a scholar at the Israeli Weizman Institute of Science:

High school students and college undergraduates discuss everything from dirty jokes to sex to crashing the VM system. The worst thing is that a user (or even a systems programmer) has no idea why file transfer has suddenly slowed down. [...] Personally, I see nothing wrong with some group of students managing a server machine for file and digest distribution (example: CSNEWS at MAINE). But the CHAT rebroadcasters, present a very large and growing threat to the BITNET network.

Nussbacher identified a list of university computers running servers and asked administrators to shut those down, as they were detrimental to the purpose of the BITNET system. Predictably, this was not received well by the people using the network’s Chat facilities. Marvin Raab, a student representative from Queens College in New York replied arguing that even though the frivolous usage referred to by Nussbacher was indeed a problem, chat had become a very valuable platform among students for discussions, meeting new people and helping each other with classwork. Nussbacher then proposed “Nussbacher’s axiom”: “The network should be available to

\textsuperscript{20} For ‘Frequently Asked Questions’; the term refers to a document containing answers to these questions. A FAQ could contain actual questions the author had received or seen elsewhere, but would often be an introduction to a platform or piece of software structured like a Socratic dialogue, using questions as prompts to explain various features and details.

\textsuperscript{21} Henry ‘Hank’ Nussbacher played a pivotal role in connecting Israeli institutes to early computer networks such as BITNET and EARN: “when he arrived in Israel computer networking had yet to reach Israeli academia, and he found himself trying to push it wherever he could” (John 2012, 14)
all and [...] no one user or group of users should be able to impede the transfer of data between anyone else” (Nussbacher, 1985b).

Nussbacher’s axiom however proved untenable, and eventually the popularity and computing demands of chat would cause serious problems on the BITNET network; due to the “store-and-forward” architecture, which gave messages priority over file transfers, chat traffic sometimes caused files to be kept in queue for weeks on the more popular relays. Furthermore, the chat network was limited by the reach of BITNET itself; as it was fundamentally reliant on BITNET’s network architecture, it could not be connected to or easily repurposed for the Internet, and was only useful for communication between computers and networks linked to BITNET. The lack of similar software that was compatible with the Internet was one of the main motivations for Finnish programmer Jarkko Oikarinen to develop IRC, or Internet Relay Chat, in 1988—initially as part of a hobby project to improve the features of OuluBox, a Finnish BBS22 he maintained.

There was some existing chat software that was compatible or even reliant on the Internet—talk, a Unix program, had been included since the earliest versions of the operating system, though it was limited to real-time chat between two people. Group chat was supported by other software, such as MUT (MultiUser Talk), or a program called rmsg, but as Oikarinen put it, “that program has a bad habit of not working properly, so in order to fix this, the first implemented thing of [the] BBS plan was IRC”. IRC soon superseded the BBS plans, and emerged as a stand-alone group chat application.

Like BITNET Relay Chat, on IRC networks usually consist of multiple interconnected ‘sub-‘networks or servers: people connect to a server, which is in turn connected to other servers, and thus can send messages to others even when they’re not on the same server as them. Such servers are analogous to the BITNET Relays that forwarded messages to other relays and the individuals connected to it. On IRC, such a web of interconnected servers is called an IRC network. IRC supported many of Relay Chat’s features: public and private channels, channel lists and looking up user information. As

22 A BBS, or Bulletin Board System, was a computer system that could be connected to via a phone modem. It typically served a combination of news, social functions (e.g. message boards or chat) and downloadable software. BBSes were not part of the internet, though they initially used the same infrastructure (telephone landlines).
the platform become more popular locally, Oulu University—which owned the
intellectual rights to the software, as Oikarinen’s employer—allowed the software to
be made publicly available. This in turn allowed others to download and run the
software, and to set up their own servers and connect these to the original server on
Oulu. The second server to be connected was hosted at what is now Aalto University in
Helsinki, and soon other Finnish universities and research institutions joined as well,
with these servers together forming an IRC network spanning Finland.

International growth on the other hand was slow initially, not helped by the fact
that Finland’s ‘local’ internet was not actually connected to the world-wide internet
until December 1988 (CSC, n.d.)\(^{23}\). But once the country’s networks were connected,
and as the Internet was quickly becoming more popular and BITNET suffered from
capacity issues, IRC expanded globally. As had been the case for BITNET’s Relay Chat,
IRC slowly covered more of the world as more servers connected to the network. Early
IRC servers were sometimes insular, and not always connected to each other—but

\(^{23}\) I thank Niklas Lillqvist for his help with finding information about the history of internet in Finland.
soon these separate networks were joined together to create one single world-wide IRC network, starting with servers hosted by the University of Denver and Oregon State University in the United States (Stenberg, 2011).

Notably, the platform was very small at this point, even when many servers connected worldwide. According to programmer and early IRC user Daniel Stenberg, “IRC averaged at 12 users on 38 servers” in July 1990 (ibid.); thus, at most times, more computers than people were connected to the network. Even in 1992, the network was not larger than “500 ppl in rush hours” according to a message on the operlist24 from 1992, though it was noted that this was already “five times [larger than] the [BITNET] Relay”. On the other hand, the software on which the network ran was being developed actively, and new features were added at a quick pace. As the original author, Oikarinen was involved with the effort, but a number of other people contributed time and programming code, and new versions of IRC’s server software were released regularly25. Development was coordinated via mailing lists and, inevitably, IRC. A number of mailing lists were used: perhaps most important were the operlist, where IRC network administrators or ‘operators’ discussed policies and requested features, and irclist, hosted by Oulu University and home of discussions about the network’s protocol.

On BITNET, all Relay Chat relays had, in principle, been connected with each other—directly or via other relays. Originally, as its network grew, this was also the case for IRC. But as the amount of IRC servers that comprised the network rose, differences of opinion on how to run those servers also emerged. An early consequence of such debates was the unilateral exclusion of one particularly ‘rogue’ server, named eris, from the network—the resulting network was referred to as the ‘Eris Free Network’, or EFNet. Eris itself disappeared shortly afterwards, as its distinguishing feature (it allowed everyone to connect their own server to the network, regardless of how compatible or malicious it was) also quickly made it unattractive for people to use for chat. The IRC network was unified again, with everyone connected to one network of servers. A second ‘split’ however, of a group of servers that experimented with new

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24 See Appendix A for more information on this list and the archive of it that was consulted for this thesis.
25 A more detailed analysis of IRC’s development is found in Guillaume Latzko-Toth’s dissertation ‘La co-construction d’un dispositif sociotechnique de communication: le cas de l’Internet Relay Chat’ (2010).
and incompatible features, was more sustainable—and a new network (Undernet) appeared alongside EFNet in 1992. Later, other networks would be created with new incompatible features or rules. While people would typically notice little direct differences between servers in their usage of IRC, there were differences in rules and policies that could have an impact, and each channel existed within the confines of its parent network; thus people needed to be mindful of which network they connected to when using IRC, making this split more than just a technical curiosity.

This fragmentation persists in 2018, and a significant number of networks exist. The largest have tens of thousands of users (or hundreds of thousands when IRC was most popular, around 2005), the smallest hundreds or less. Networks differ in their policies and features. For example, many servers offer people the option to “claim” their nickname, so others are not able to use and ‘steal’ it while they are offline (nicknames must be unique)—yet QuakeNet, one of the larger networks, offers no such facility. Some networks are linked explicitly to another social platform outside IRC; an example is Snooone, which is mostly used by visitors of online discussion platform Reddit, and requires chat channels to have names matching their counterpart message board on that site. Other networks’ themes are more abstractly defined: Freenode, for example, is traditionally a popular network for technology and programming-related channels, while QuakeNet hosts many video game-themed channels and chat on IRC-Hispano is generally limited to speakers of Spanish. Other networks are tied to a specific institution or organisation, for example those of the W3C, a standards body, or Mozilla, a browser developer.

What these networks have in common is that they can all be connected to by any software that implements the IRC network protocol—an IRC client. Most modern clients support connecting to multiple networks simultaneously, and channels from different networks can be used simultaneously without much emphasis on the fact that they are actually on different networks. And in most cases, simply talking on these channels will generally work the same regardless of networks. The channel is the principal context of interaction on IRC, to which one sends messages and in which one sees the messages sent by others. As such, the barrier to moving a channel to another network is lower than, say, moving from Twitter to a Twitter alternative, because in the latter case it is more or less required that a significant amount of one’s Twitter
connections also move to make that a worthwhile decision. On IRC, networks can co-exist and even be connected to simultaneously. There may be subtly different policies about what is and isn’t allowed; or there may be more features for channel moderators to control or filter the messages sent through the network; or the network may or may not offer helpful services that allow registering a nickname as one’s own. But as long as the server can be connected to using the IRC protocol, they are to an extent interchangeable, or at least similar enough that they are part of the same platform.

5.2. Vague boundaries: is IRC a platform?

Because IRC is at its core defined by the IRC protocol, and because networks are to an extent interchangeable, it can be difficult to say where exactly the boundaries of IRC as a platform lie—there is no clear link to one particular website or a specific kind of software. Recall that “platforms aren’t things; they allow things to happen”. What things does IRC allow to happen? And where do these things stop being able to happen?

Essentially, a protocol defines exactly that: it describes the various things that can happen on a platform, on a technical level, and what should follow when they do. The various RFC documents describing IRC very precisely define what kind of data can be transmitted between various IRC clients and servers and how that data should be handled. Through this, certain types of interaction are made possible, while others are precluded. And while the RFCs are not completely accurate and not necessarily followed faithfully by all IRC software, they are a reasonably accurate blueprint of IRC’s features on a technical level; it specifies how text is sent, what kind of characters it may include, how someone can make a connection to a network and join a channel, what format the name of a channel should follow, et cetera. In general, on IRC, the platform makes text chat possible; this text-based chat is organised through channels or one-on-one conversations.

The danger of such a general description is that there are many other platforms that offer similar experiences—and yet these platforms are clearly different and
separate from IRC. Skype, for example, is perhaps best known for its video call features, but also offers text chat, either one-on-one or group-based. And as opposed to IRC, Skype also allows multimedia content to be sent, like videos, images or sound. Skype uses its own, proprietary protocol, and is not compatible with IRC; but as on IRC, there is virtually never a need for people to engage with the protocol directly, as software translates their input into the right data structure for it to be compatible with it. Technical differences are thus obscured and to a certain extent the things Skype and IRC allow to happen overlap.

Of course, there are many differences between IRC and Skype as well—such as the fact that Skype offers rich media content as part of its messages, or that on IRC one can join a new channel of their own volition while on Skype someone already in a group would need to invite new members to it. While some of these differences may be small on their own, taken together they constitute a significant difference, and afford different kinds of usage. Skype is only available through Skype’s own interfaces; it requires people to register an account and share their personal information with the platform; and there is a persistent, personal list of contacts that one is explicitly connected to, which is not the case on IRC.

In other cases, the boundaries between IRC and other platforms are more difficult to define. As an open protocol, IRC has been appropriated by various other platforms as the technological basis for their own chat platform. A prominent example is video streaming platform Twitch.tv, which allows people to broadcast live footage of themselves playing video games, while viewers can chat with each other and the broadcaster through a chat panel displayed next to the video.

5.2.1. Slacking off on Twitch

Taken at face value, Twitch.tv’s chat is essentially IRC. It is possible to connect to the chat with an IRC client; the chat groups for specific live streams are analogous with IRC channels; and chat is text-based, while moderators use the standard IRC features (kicking, banning and muting) to moderate discussion.

So, to a large extent, Twitch.tv’s chat and IRC allow the same things to happen. On the other hand, chat channels on Twitch.tv are clearly linked to video streams, and usually the discussion in a channel will take the form of a running commentary of
whatever is being broadcasted. In that context, connecting to the chat via an ordinary IRC client would only offer half of the conversation; the video stream that everyone else is watching and discussing cannot be received through IRC.

![Figure 8](image_url)

*Figure 8. A screenshot of a Twitch.tv live stream, with the chat panel on the right. Note the popularity of graphical emoticons, an addition specific to Twitch and not part of IRC.*

This is perhaps why Twitch does not prominently promote the fact that their chat is IRC-based on their website; clearly the intention is that people partake in the chat via the web interface or the various apps Twitch offers for mobile devices, where the chat is always shown together with the corresponding video stream. The settings required to connect via another client are only found in a relatively hard to find article in the site’s help section, and seem to be primarily offered as a way to allow people to develop third-party services that connect to and enhance the Twitch chat platform.

Thus the main utility for the IRC-based connection that Twitch offers is that they provide an interface for chat bots; software that observes the chat and reacts to certain phrases or behaviour, or periodically advertises the broadcaster’s website. While Twitch does not provide such chat bots as part of their platforms, various third-party bots are used widely to help moderate chat or provide simple text-based games for viewers. Chat bots for IRC have existed for decades, and many variants exist; IRC-based chat bots could be used for Twitch chat and vice versa, though features that rely on features unique to Twitch’s server would no longer work.
The existence of derivatives like Twitch chat thus makes it difficult to define the boundaries of IRC as a platform. Technologically, ‘mainstream’ IRC and Twitch chat are largely similar; the main difference lies in the interface through which the platform is generally accessed. But one of IRC’s key features is that a variety of clients exist; Twitch’s interfaces could be seen as yet another client for the same platform.

It is useful then to distinguish between IRC as infrastructure and IRC as a platform. Clearly, Twitch can be connected to the IRC infrastructure: it is compatible technically, it is organised similarly and makes use of the same kind of third-party additions as IRC does. But it is its own platform: a Twitch.tv user account is required to successfully connect to the Twitch Chat servers, its discussions more often than not concern live streams that are only visible through its official website or apps and IRC features not relevant to those interfaces are disabled. Twitch Chat channels do not allow channel topics (banner texts prominently displayed to everyone in the channel), for example; and nicknames cannot be changed freely like they can be elsewhere.

A similar distinction can be made between mainline IRC and other derivatives. Slack, for example, is a “team collaboration tool”, as Wikipedia describes it, a business-oriented chat and teleconferencing platform. It was originally built as a more feature-rich version of IRC and still offers an “IRC gateway”, an interface through which to connect to the platform using an IRC client. But like Twitch, it also offers many features that are only available through its own interfaces, such as voice chat, file sharing and a persistent message history.

This is an important difference. IRC can be connected to through an arbitrary client, but after connecting the same features will be available; the clients are mostly interchangeable. People may have a personal preference for a particular client due to its interface, the platforms on which it is available, et cetera, but while that may translate to a difference in affordances, the features that are available are mostly identical, and the difference lies in how they are conveyed to the person using the client. On the other hand, both Slack and Twitch require people to use their own clients for the ‘full experience’; ordinary IRC clients are not compatible with the more advanced features of the platform, while some standard IRC features are not offered by these more modern platforms. In other words, they no longer allow the same things
to happen, even if on a technical level they can be connected to and are part of the same infrastructure.

It is perhaps more useful to see the relation between Twitch and Slack on the one hand, and IRC on the other hand, as similar to the relation between TxtMob and Twitter; one clearly inspired by the other, but otherwise separate platforms. That they can be connected to via an IRC client is interesting, and belies a historical connection between the platforms, but is not in itself sufficient to make them the same platform, given the reliance on features that are not part of the IRC standard as implemented by the vast majority of client and server software. Again, that divergence is where Twitch and Slack no longer allows the same things to happen as ‘mainstream’ IRC, and therefore that is where the boundaries of IRC as a platform lie.

It is noteworthy though that Twitch and Slack could appropriate IRC the way they did; for many more modern platforms, this would present all sorts of difficulties with regards to intellectual property and ownership. Take for example Signal, a messaging platform that presents itself as cryptographically secure. The app and its protocol are open source; but when someone else built their own version of the app, Signal’s developer Open Whisper Systems barred them from Signal’s servers. In the words of lead developer Moxie Marlinspike:

You're free to use our source code for whatever you would like under the terms of the license, but you're not entitled to use our name or the service that we run. (Marlinspike, 2016)

There was no chance for such a dispute to crop up in the case of Twitch’s or Slack’s IRC gateways, as there was no one that could lay claim to the name ‘IRC’ and no centralised service anyone could attempt to control access to.

5.3. The open source wild west: organization of IRC’s development

It is useful here to take a closer look at how IRC’s development was organised, as that reveals how IRC became a platform that could be appropriated by anyone, yet still
comprises a distinct platform. IRC was originally created by Jarkko Oikarinen in 1988. This cannot be characterised as an organised effort with a grand end goal in mind, as was the case for Twitter or Signal. Oikarinen’s main object was to allow users of a specific BBS to chat with each other, and development grew organically from there. In 1993, IRC was standardised by Oikarinen and Australian developer Darren Reed as an RFC—or ‘Request for Comments’, a description of a standard that is then published and numbered by the IETF, the Internet Engineering Task Force. However, in the four years before IRC’s standardisation, development was mostly a matter of server administrators implementing features that seemed to be useful, and these being accepted or rejected by the extent to which they were implemented among the various servers that hosted IRC networks. While Reed and especially Oikarinen were important figures in the early development of the standard and software, they were far from the only people who worked on the technology.

The ‘IRC standard’—or to be exact RFC 1459, which was the canonical name of the specification Oikarinen and Reed published—was updated by Christophe Kalt in 2000 (in RFCs 2810—2813) and again by Richard Hartmann in 2014 (in RFC 7194). Like the original standard, these updates were mostly an attempt at documenting existing practice, and did little to introduce new features and changes. This is, in a way, how computer standards often work—compare for example the WHATWG, the standards body developing various web standards like HTML, which states that “we fix the [specification] to match what the browsers do” (WHATWG, 2011). But it also indicates that the actual development of the platform or standard is happening elsewhere—on the clients, servers and networks that together form the IRC platform, with little oversight or coordination.

This ‘organic’ development model sometimes led to features that were only supported among a subset of servers and clients. In the late 1980s and early 1990s, when the platform was still young, the ‘irc daemon’—a software running on IRC servers, which provided much of the platforms functionality—was updated frequently. Many updates introduced or removed features compared to previous versions.

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26 A ‘daemon’ is software that runs in the background to provide some kind of service, with little or no interaction; the term is a reference to Maxwell’s demon, a hypothetical agent moving molecules around in a system without observation or outside intervention.
Because at this point the IRC network already consisted of multiple servers, with each update a large and growing number of people needed to install new versions of the software, so their server as well would be compatible with the newest functionality. This was often a messy process: one particular update removed certain types of chat channels, but those were still available via servers running older versions of the software. Thus there were channels—and people frequenting those channels—that could only be talked to via some servers that had not updated yet. Even though new features could be added to the platform via this rapid release schedule, the incompatibility issues were not appreciated by everyone, and made things complicated for ‘ordinary’ people using IRC, who had little influence over what software the server they connected to ran. A widely distributed FAQ document from January 1992 offered the following convoluted explanation of the situation, illustrating how complex things could sometimes be for those looking to simply chat with their friends:

Users at faraway sites, whose servers have already upgraded, will not be able to see or join your +channels. To them, it will look as though you are not on a channel. This may happen even with someone who is on a 2.6 type server, if there is a 2.7 somewhere in between you and them. This is because the 2.7 will not pass on information about these channels to its other links. So you and another person may both join a channel with the same name, but if there is a 2.7 between you, you will not see each other on the channel. (Inbar, 1992)

This ‘wild west’ attitude towards big changes in the software people use persisted even when the IRC protocol and server software had more or less crystallised. For example, in 1996 mIRC, a popular IRC client for Windows, introduced ways to add mark-up to text, and make it coloured (Mardam-Bey, 1996). It did this through special characters that were part of the message text and were interpreted by mIRC to mean that text from that character onwards should, for example, be orange with a grey background. The ‘control character’ would then be hidden. This worked well enough for people using that new version of mIRC, but was not standardised—anyone reading the various RFCs to build their own IRC server or client would not find this feature described within them.
The result was that while mIRC users enjoyed a more versatile way of expressing themselves, other client software would display normal, black-on-white chat text mixed with the gibberish control characters it didn’t know what to do with. This sparked a small controversy among IRC users. In a long chain of messages on Usenet’s alt.irc newsgroup, titled ‘mIRC colors are getting annoying’, people discussed ways to automatically kick people using these colour sequences from channels, and whether it was even acceptable for the author of popular client software to unilaterally implement a new text markup feature (alt.irc, 1996-1997). The backlash was only in part due to the fact that not all clients knew what to do with the new markup; others simply found the coloured text annoying in general. Either way, mIRC’s popularity more or less forced other clients to do something with this gibberish, and many clients support this ‘mIRC-style’ markup now—but it is still not part of any ‘official’ IRC standard and it was not a smooth process.

Similarly, many servers implement a service that allows users to register their nickname and make sure it is not ‘stolen’ by someone else while they are disconnected from the network—a sine qua non for most modern social platforms, where a (user)name is usually one’s primary identifying feature. But IRC’s original specification and its updates never had any provision for such a registration feature, and thus various kinds of IRC server software all implement their own version of it. Usually someone can send a message to a chat bot connected to the network, which then registers the nickname the message was sent with, and requires anyone subsequently using the nickname to log in with a password or have their name forcibly changed. This works well enough, and people connecting to the server may not notice the differences between the various implementations they encounter. But there are usually subtle differences, and other such services may be more distinct—Snooonet, the IRC network associated with social platform Reddit, offers people a way to filter certain phrases from chat, while such a feature is not available on QuakeNet. As such servers can be fairly insular, each with its own feature set that makes it incompatible with other servers. For example, Quakenet’s servers are run on ‘snircd’, software written by QuakeNet’s own staff\(^{27}\)—the popular network Freenode, on the other hand,

\(^{27}\) QuakeNet publishes snircd and other software it uses internally online, on https://development.quakenet.org/
runs on ‘ircd-seven’\textsuperscript{28}, a completely separate software package that has an overlapping yet different feature set.

In 2014, a group of developers of IRC client software formed the IRCv3 Working Group, who describe themselves as “chartered to prototype, develop, test and specify further extensions to the IRC client protocol” (2015). The group’s work is a mix of attempts to standardize existing practice (such as user registration) and introduce new features (such as a way for people to efficiently monitor whether someone else is also online). Thus, the work of this group can to some extent be characterised as similar to that of the authors of the various RFCs—documenting what is happening in the ‘IRC ecosystem’ so that people writing client or server software can make their applications compatible with the network. But it is also the first time there is a concerted, transparent effort to add features to the platform in a consensus-driven way.

A similar project is ircdocs, an initiative by one of the IRCv3 developers to document and formalize features such as coloured text, that are already part of virtually all IRC software but are not part of the IRC protocol yet and as such not an agreed-upon standard. It should be noted that neither ircdocs nor IRCv3 are in any way ‘official’. Those who wrote the original RFC’s are not involved and it would be debatable whether even they should be considered to have any real power or authority over IRC, as any new features would need to be implemented by a wide variety of software, most of which is developed and maintained by other people. The IRCv3 working group is comprised of various developers of IRC software and network administrators, which at least puts the group in a position to effect actual change on the network despite the lack of formal authority over the platform. This is also the reason IRCv3 attempts to implement new features in a backwards-compatible manner; there should be no need to ‘split’ the IRC network again based on features, as older clients and servers should be able to work with people using a newer version.

Until initiatives such as these, new features usually took the form of ‘services’, such as the service discussed earlier that allows people to permanently claim a nickname. To people using IRC, these services appear as just another person using IRC. In this, these services are essentially chat robots, following earlier examples such as Eliza, the

\textsuperscript{28} Likewise, Freenode publishes its software on open source repository GitHub, at https://github.com/freenode/ircd-seven.
pseudo-therapist that would entice people to open themselves up by responding to their confessions with general but interested-sounding queries. IRC Services generally do more than reply with a canned response when given commands, but are the same when it comes to their interface; they react to chat that follows a specific format, or particular kinds of events such as someone joining a channel.

5.4. Bots: automated chat on IRC

IRC may have been intended to be a protocol for internet chat, or “text based conferencing” as it was formally described (Oikarinen and Reed, 1993). But its relative simplicity and openness afforded a large amount of agency for people to appropriate the protocol for more advanced applications. Many of those third-party applications were, essentially, chat bots. In this, they were similar to other kinds of IRC services, and the main distinction is that while services are provided by the chat network, bots can be run by anyone. Like services, bots may thus respond to user commands, detect spam or provide on-demand information.

Bots are often continuously online, running on an always-on computer, and as such can be relied on to provide some of the features that IRC itself lacks, such as replaying conversations that happened while one was offline, or seeing when someone else was last active. They can also be used to store personal information, so it becomes possible for others to get a quick overview of what kind of people they share a channel with; even though IRC itself provides nothing like ‘user profiles’, such a feature can thus be considered to be part of IRC if provided through a third-party chat bot.

Chat bots are not unique to IRC, though IRC is perhaps the first platform on which they were particularly prolific. Many IRC bots are relatively simplistic programs, responding to pre-defined text commands in a predictable manner; while they are a useful tool to fill some of the niches IRC itself has, they are mostly automatons rather than realistic chat partners. As developments in artificial intelligence afforded more sophisticated conversations, social network sites like Facebook, WeChat and WhatsApp have also embraced the concept, with chat bots that have functionality to allow people to for example order flowers, book a cab ride or look up what the
weather will be like tomorrow. IRC chat bots are often less sophisticated than such AI-driven software, and the ‘chat’ in ‘chat bot’ refers to the interface through which they communicate rather than the activity they are meant to facilitate.

This is especially true for the earlier bots on the platform. NickServ, as the almost-ubiquitous nickname-registration service is called on most networks, is a particularly old example; in alt.irc, the IRC-themed newsgroup, the service is first mentioned in January 1991, and many networks still offer a version of it two and a half decades later. But while NickServ is and was ubiquitous, it was far from the only chat bot even in 1991. Mailing lists and newsgroups at the time mention many other network-wide services, some more useful than others; a post on alt.irc from December 1992 summarizes the proliferation of services as follows:

The first bot was a simple /on join hello thingy. Damn annoying, that was; glad it's mostly gone. Things took off from there. The first true, independant robot I can recall was HugServ, for sending hugs. Just what everyone needed. There followed the growth of the IRC-Useless-Service-of-the-Week, up to and including ServServ, which kept track of all the rest. I always felt that it should have been called "MetaServ," but nobody listened.

Other bots were set up to address the lack of persistent ‘user profiles’. On a platform that was, among other things, used to flirt and set up dates, not being able to look up someone’s gender could be inconvenient. A Norwegian programmer therefore set up a bot that would, when given a name, respond with information on whether that name was generally masculine or feminine (Leonard, 1997, p.98). Other services were more focused on a particular channel or group of channels; these typically offer entertainment-oriented commands for people to use so they can look up information, play simple games or leave messages for people that are offline. An early example was the ‘gm’ (for ‘game master’) bot that hosted a game called Hunt the Wumpus29. Wumpus was an early computer game, its first version released in 1972, in which

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29 The ‘gm’ bot also served as an inspiration for TinyMUD, a popular MUD (Multi-User Dungeon, an IRC-like platform for roleplaying). MUDs are in many ways similar to IRC with bots, though they generally exclusively focus on roleplaying rather than the more general-purpose chatting IRC affords. For a more expansive exploration of the ties between IRC bots and MUDs, see Andrew Leonard’s Bots: The Origin of a New Species (1997).
people had to guess where in the game world the titular Wumpus was hiding, based on hints. In the IRC version, players would type commands in a dedicated channel that were then replied to by gm, indicating whether the Wumpus had been found or whether the player had perhaps fallen into a trap.

‘gm’ and many other earlier bots were single-purpose software programs, meant to facilitate one specific kind of interaction and not much else. Later, more general-purpose bots were created. One of the most popular ones was Eggdrop, first released in 1996 to cope with mischievous bots trying to disrupt conversation in the #gayteen chat channel. Usually such bots offered a way to customize the commands they would accept and how they would respond to them. A contemporary popular version of such a bot is CloudBot, first released in 2011. As of February 2017, it has been ‘forked’ (copied and changed by someone else) 203 times on GitHub, a platform for open source projects, indicating that such services are still in demand and actively developed.

Because IRC is a relatively simple protocol, that at its core comes down to sending text commands back and forth between a server and a chat client, writing such a service or bot is relatively easy. Many popular clients also contain features that allow people to add simple pre-programmed reactions to specific phrases. The first instance of this is when in September 1990 Michael Sandrof added a command to ircII, a very popular early chat client, that “[let] you set up actions which can occur automatically when certain events occur” according to a description on alt.irc. But writing a dedicated program that interacts with an IRC server is not difficult either, and configurable stand-alone bots such as CloudBot or Eggdrop are used widely on all IRC networks.

It is perhaps this extensibility that has allowed IRC to remain in use and even evolve while the core protocol has been practically unchanged since the early 1990s. Even though the underlying technology is the same and no single entity has the authority to change or extend it, that technology through its simplicity and the fact that its specifications are freely available has afforded the development of new services and features on top of it. Even though IRC had stagnated as a protocol, the platform itself was alive, because the protocol and network structure afforded writing bots and services that would add new features to the platform.
But as bots could be developed by anyone—all it took for one to run was a computer with a connection to an IRC server—they were not always benign. Andrew Leonard, in his 1997 history of bots across various platforms, describes various kinds of hostile IRC bots, such as ‘floodbots’ (designed to overwhelm a channel with spam), ‘clonebots’ (that would return with another instance of themselves once kicked from a chat channel) and ‘annoybots’ (that simply harass a specific user, for instance by following them from channel to channel or sending inane messages). This was obviously detrimental to the experience of those just looking for chat, and “by late 1995, much of IRC community regarded all bots as menaces to society” (ibid., p.112) and “by 1996 the bot climate had gotten so bad on IRC that most IRC operators were banning all bots and botrunners30 from server access on principle” (ibid., p.108). As an EFNet operator put it in a Usenet post from February that year, “[g]et em off our g'damned net before we blow your bot away with a [lethal] dose of packet. :)

This led to an arms race between IRC operators and bot programmers; programmers trying to make their bots less recognisable as such, and operators finding new ways to check whether someone on their network was actually human. Eventually, things stabilised and most networks now allow bots again, though many still have rules concerning their behaviour. For example, from the most popular IRC networks, QuakeNet still tells anyone connecting that “[no] flooding (including flood/clonebots)” is allowed, Rizon similarly warns that “[no] clones or malicious bots” will be tolerated, while Snoonet nominally requires all bots to be registered with the network. But the various measures that were developed to counter bot-induced chaos did have more practical consequences too: the ‘great split’, in which the original IRC network split into EFNet and Undernet, was partly caused by disagreement on how to best prevent people from taking over channels or stealing nicknames.

Even earlier, bots were a factor to be reckoned with when designing the platform. For example, at one point, in June 1992, there was a proposal on the ircd3 mailing list to allow people to achieve ‘operator’ status over a channel—which would allow them to moderate discussion there—via a democratic vote. One of the objections against this was that people could easily game this system via a set of ‘vote-bots’ and thus gain control over multiple channels illicitly, and the feature never made it through. On the

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30 i.e. those who run a bot, and are thus responsible for connecting it to the network in question.
other hand, it was just as early that bots were recognised as a way to provide features IRC did not offer on its own. Per a message to operlist:

> Many of the concepts that are present in IRC come from evolution and not from intelligent thinking from the beginning. IMHBOFHO\(^{31}\), there shouldn't be a thing such as "nick collisions" or a need to have bots stay around 24hrs a day simply to provide +o. Unfortunately, the current IRC environment almost dictates.

It is noteworthy that the popularity of benign and malicious bots, and the subsequent cat-and-mouse game, only ensued on IRC and not on BITNET, even if that was in many ways a very similar network and should therefore at first glance have been susceptible to similar problems. An important difference here was that bandwidth and computing power on BITNET-connected systems were scarce, and as such those hosting the servers that comprised the network—mostly universities—kept a tighter leash on what happened on the platform. A “Bitnet Relay-OP”, describes how “the authorities of Bitnet authorised the Relay to work only if it will be severely moderated and censored” in an e-mail to the same operlist in January 1992. “The authorities” here likely refers to CREN\(^{32}\), the organisation overseeing BITNET. In a reply to the same message thread another operator, likewise says that “[u]nlike IRC, no offense, we keep the BITNET (CREN) rules and regulations extremlly tight, and we make sure that the users will get the best service which is possible to be given”.

Thus any mischievous bots would have faced harsh consequences such as disconnection, whereas the environment on IRC was less strict in comparison, allowing for a prolific ecosystem of real people and bots, both useful and annoying. Chat on its own presented a problem for BITNET given its demands on the network; bots, which at times threatened to overload even the (larger) IRC network, were not feasible in such an environment. Consequentially, BITNET was purely focused on chat; it did not have

\(^{31}\) “In my humble bastard operator from hell opinion.” In the words of the Jargon File, a “bastard operator from hell” is “a system administrator with absolutely no tolerance for lusers;” “lusers” in turn being a portmanteau of “user” and “loser”.

\(^{32}\) Not to be confused with CERN, the European research institute at which Tim Berners-Lee invented the World Wide Web in 1989.
features or services that allowed playing games with other people or saving personal information for interested chat partners.

5.5. **Trade-offs: (Dis)advantages of the UNIX philosophy**

Thus the open and relatively anarchic nature of IRC presents a trade-off. This trade-off can be linked to the development paradigm that was prevalent at the time IRC was created, as it informed many of the design choices that inform IRC’s fundamental characteristics. These characteristics then present both opportunities and limitations. On the one hand, IRC’s design gives people ample freedom to set up their own incarnation of an IRC network, and this coupled with how easy it is to create bots and services also makes it easy to customize the platform’s features, to an extent. On the other hand, there is only so much one can achieve via bots, and they can be used in ways that impede social interaction, or even the network’s stability.

Furthermore, the fact that networks have to implement some features (such as registration of nicknames) by themselves via services and bots has led to fragmentation, and a number of incompatible but functionally similar services exist across networks, which makes it hard for client software to put such features behind a standardised interface. Thus in many cases people are still required to type text commands to log in or register their account, which is a contrast with the slick user interfaces that can be used for such things in apps and on websites for other social platforms, and is in many cases not an attractive prospect, especially for people not familiar with interacting with a computer via text commands.

Projects such as IRCv3 are set up to regain some measure of centralised control over, if not the politics of the networks, at least their features and underlying technology, allowing clients to e.g. streamline their interfaces for a standardised registration process if they desire to do so. As long as the most prominent software developers and network administrators are involved, there is a fair chance that such a project could effect change. mIRC managed to make their way of marking up text a *de facto* standard through sheer popularity and consequentially the fact that other clients
had to adapt or face unreadable conversations; thus even if the platform is structurally decentralised, anything that affects a large amount of the people using IRC has the power to effect change. But this path to change is heavily reliant on achieving consensus among a plurality, if not a majority, of software developers involved with the platform. Therefore the process is far more fragile than it would have been in case someone could have made unilateral decisions, as happens on Twitter, and after a certain amount of fragmentation of the network (such as after various ‘network splits’) changes and new features become exceedingly difficult to deploy widely.

On the other hand, the relative anarchy of IRC as a whole has afforded modes of conversation and features that would probably have not been possible on a more centralised platform like Twitter. Twitter does not have as large a variety of client software as IRC, which is at least in part attributable to the fact that Twitter controls access to its platform and limits it to a certain amount of users per application. And one third-party client more or less singlehandedly forcing the platform to introduce coloured text would never have happened on Twitter without Twitter’s own fiat. Of course, Twitter has adopted popular features and responded to calls for change; the hashtag and @replies are great examples of that. But clearly those processes still required Twitter’s blessing, and other calls for change (e.g. more features for blocking harassment) have gone unanswered or received lukewarm response, even if a large number of people backed them.

5.5.1. Software development: ideology and practicality

IRC’s invention can hardly be characterised as ideologically motivated or guided by a certain vision of what the platform should make possible; in this it is different from Twitter, which had a clear goal of building a platform based around status updates. IRC was first and foremost a utilitarian solution to a relatively limited problem—communication between friends who were separated by distance but connected by computers, within the context of a minor BBS. IRC’s predecessor was more or less similar in this regard—BITNET was conceived as a tool to swap data between universities, and the chat built on top of that network was essentially a fun ‘bonus’ hobbyists created in their free time. Only later in its life BITNET’s overseeing body, CREN, would formulate a clear mission statement—that:
the people who advocated and supported the information
technology infrastructures on member campuses should have the
opportunity to directly experience advanced technology for the
delivery of training and learning materials (CREN, n.d.)

While this could be seen as an ideological motivation for developing BITNET, or at
least a more visionary objective than simply finding a way to get messages from one
place to another, CREN was only formed in 1989, when BITNET had already been a
platform for chat for years. There is a clear parallel between IRC (and BITNET’s)
‘organic’ development model on the one hand and the lack of vision or ideology on the
other hand. The contrast with Twitter, with its roots in activist technology and its focus
on being a platform for people to share a specific kind of content, is clear. Additionally,
the Relay Chat application of BITNET had always been something of a hack, afforded by
BITNET’s architecture but not its intended usage and sometimes even at odds with the
goals of the platform; it was tolerated by the network’s administrators, but often not
appreciated.

BITNET and IRC’s lack of explicitly articulated ideological roots, or clear underlying
vision, could be said to be exemplary of the pre-1990s internet or computer culture in
general. This does not mean that the development of these platforms had no
ideological component; but they mostly did not follow explicit mission statements, or a
pre-defined plan. Likewise, the internet was certainly not free of political discussion or
activity in those days—Usenet was a widely used discussion platform, with many
groups dedicated to discussions on ideology and politics. But internet technology was
still mostly developed through the aforementioned utilitarian model, where someone
would write software for themselves to do some specific thing they wanted it to do,
and not much more than that. Often this relatively simple software would be useful for
wider application, or extended to be so, which lead to the popularity of platforms such
as Usenet and Relay Chat. But such popularity was rarely the goal when developing
software; while commercial software existed, projects such as IRC and BITNET Relay
Chat were never intended to make money, and thus did not necessarily need to
convince others to use them. This can be contrasted with business-driven platforms
such as Twitter, that often have their development funded by investors who expect a
return on investment and hence, the platform’s goal is to both grow and make money
somehow. IRC’s development, on the other hand, was volunteer-driven and open; everyone could, in principle, propose and add new features to it, but without the expectation that this process would lead to one specific end-point.

Furthermore, IRC was available to people to not just use but also tinker with more or less from the beginning; Twitter spent a while as a side project inside Odeo before it was released to a select group of testers, and there was a clear hierarchy where Odeo (and later Twitter, Inc.) had the fiat over any new features. IRC on the other hand operated on what one could call a meritocracy; anyone could propose features or contribute code, and if enough people appreciated it they would start running that code, effectively making it part of the platform. The early years of the platform are characterised by a rapid succession of new versions, patches, and large changes to the platform’s features, that sometimes brought problems for those on servers running old versions but also allowed the platform to quickly adjust to the requests and wishes of the people using it (or people misusing it) as is illustrated by the tug-of-war between malicious bot operators and IRC administrators.

In many ways this dynamic is exemplary of the time IRC was released and developed. Perhaps this period, the end of the 1980s, is—at least when considering the development of software—best characterised by what is sometimes referred to as the ‘Unix philosophy’, after the Unix operating system that was ubiquitous in 1980 and the preceding decades. In the influential 1984 book *The Unix Programming Environment*, computer scientists Brian Kernighan and Rob Pike describe how “[m]any UNIX programs perhaps do quite trivial things in isolation, but, combined with other programs, become general and useful tools” (viii). Similarly, Unix developer Douglas McIlroy characterises the Unix philosophy as being about “[writing] programs that do one thing and do it well” (quoted in Raymond, 2003b). Free software pioneer Eric S. Raymond asserted that one should “write a big program only when it is clear by demonstration that nothing else will do” (ibid.). In summary, the Unix philosophy favours small, self-contained, single-purpose programs over large visionary software suites that offer an integrated solution to a problem.

Clearly this is not a binding imperative and everyone was free to develop software according to a method of their liking. It is also debatable to what extent the Unix philosophy was taken as a guideline outside the Unix software environment itself.
Especially a hobby project, like IRC initially was, is unlikely to adhere to a rigid programming paradigm during the initial stages of its development. Additionally, GUI-based systems had been available since the early 1980s; models like Apple’s Lisa computer or IBM-compatible PCs running early versions of Windows were widely available when IRC was first developed. Thus, the Unix philosophy was far from ubiquitous even in that era.

Yet, many programs that formed the core of the 1980s-era computer experience were relatively simple. There were programs for reading and writing e-mail (rd), one for reading Usenet posts (usenet), one for connecting and sending data to other computers (telnet) and later one for retrieving web pages from the world wide web (lynx). The design of the Unix operating system made it easy to connect these applications to each other, so that people could create the solution to more complex problems by chaining together the output of many separate, smaller programs. This obviously required significant knowledge of how computers worked and the exact functionality of each of these programs, but given that at the time many people that used a computer were also the creators of such software this was generally not an issue.

In the later 1990s however it became increasingly commonplace to offer software that incorporated many of these features into one package—for example, Netscape Communicator, an ‘internet suite’ based on the popular browser Netscape Navigator and first released in 1997 offered an e-mail client, a news reader, an address book, an html editor, a client for conference calls, a calendar and a web browser in one package. While such suites have largely fallen out of favour, on balance modern messaging and browsing applications still offer a wider array of features than pre-1990 software, often integrated and tied to one centralised user account.

IRC by contrast can firmly be placed in the more Unix-inspired category of software. IRC itself, as a protocol, describes a relatively simple way of sending messages back and forth, to either individuals or groups of people in channels. Some other features are described as well, such as how individual IRC servers can be connected to form a network, how to change nicknames or how identify users as network administrators. But other functionality—like sending files to someone else, or looking up information about a chat partner, or what the interface should look like and how people should
interact with it—is not described by IRC itself. Instead, people developed additional protocols for these functions, that could then be adopted by client software to offer additional functionality but was not necessary for IRC clients to function. Other features were added through services and bots. To the extent that this technology was standardised or formally described, it was done after the publication of RFC 1459, when IRC itself was already a thriving technology.

The implications of this development philosophy for IRC as a tool for discourse and sharing are twofold. On the one hand, it gives people freedom—if IRC was not sufficient for their needs, they could write additional software based on it that would be, and given a wide enough adoption this software could then become part of the “standard” way of using IRC. On the other hand, any new feature would face inertia from the existing ecosystem of IRC software, and widespread adoption would require many separate software packages to be updated. In practice, the extent to which such an open model affords ‘co-creation’ from users is therefore significantly limited.

In this, IRC presents an interesting contrast to Twitter. Twitter, as a platform that is centralised as well as created and controlled by one entity, can move relatively fast when it comes to adding, removing or reconfiguring features. While it would need to ensure that the various interfaces through which people use the platform are updated as well, most of these are developed and maintained by Twitter itself and thus changes can be implemented swiftly. IRC, on the other hand, is decentralised; any changes would need to be adopted and implemented by a wide array of maintainers, of both server and client software; to what extent they are willing and able to do so may vary and thus implementing any platform-wide changes is exceedingly difficult.

This is a well-known problem for open source or decentralised platforms; while from one perspective it might be desirable to empower users and relinquish central control, from another perspective distributing control also inhibits the ability of any one person or entity to effect meaningful change on the platform. In IRC’s case, this is compounded by the fact that it is relatively old by internet standards, and access to the platform has grown to be facilitated by a large number of programs and software, with a similarly large number of people who would need to step in to update that software. In the words of Moxie Marlinspike, lead developer of ‘secure’ messaging app
Signal, “extensions don’t mean much unless everyone applies them, and that’s an almost impossible task in a truly federated landscape” (2016).

5.6. Faded glory and/or niche powerhouse: IRC in the Twitter era

There is a clear link between IRC’s origins as an open source hobbyist project and the current state of the platform: a declining but still lively avenue for conversation that, due to its open and decentralised nature, has been reconfigured and appropriated into an ever-growing ecosystem of variations. Many of its characteristics betray its roots in the late 1980s and its earlier BITNET incarnation, such as the reliance on typed commands and chat bots for advanced features, the lack of native support for anything but simple text chat or the fact that its open nature was more of an afterthought than a conscious decision.

Thus like Twitter, IRC is very much a product of its time. But the implications of that are different in this case—whereas many modern platforms give the people using them very little agency in (re)configuring the platform to their purposes, this is not the case on IRC. Though IRC networks have and enforce rules, and these may limit the things people can do with it (such as during the ‘bot wars’), there is always the possibility to set up an own IRC network, with the rules and features that are desired. And because the basic ‘social unit’ of IRC is the channel, all that is really needed for such a network to succeed is that the people in a channel join in the move to a new network, which can then be used simultaneously with other networks; as opposed to networks like Twitter that rely on a critical mass of people to be worthwhile to join, and do not allow others to host alternative versions of the platform.

However, the open architecture, influenced by the Unix philosophy, clearly has its drawbacks as well. As discussed, a fragmented ecosystem makes it harder to make meaningful changes to the platform as a whole, and after a few relatively productive years of development in the early 1990s the platform’s development has stagnated.

33 “Federated” here means two distinct networks, that may be using different software but can communicate with each other through a shared communication protocol. Marlinspike is discussing XMPP here, a protocol for instant messaging, but IRC would qualify as well.
Thus it is still mostly limited to plain text, and the advances that have been made regarding multi-media content since the 1990s seem to have been ignored by the platform. Even coloured text, a relatively basic upgrade, was a controversial update to the platform and lead to much debate. This showed how on a decentralized, open platform like IRC there is always a risk of changes dividing the platform’s users. Projects like ircv3, in which a large amount of platform stakeholders are represented, have the potential to effect changes in a controlled and meaningful way, but the process is fundamentally more fragile and reliant on consensus than that in, for example, Twitter, which can take decisions unilaterally.

This is perhaps the major difference between Twitter and IRC; while both were immensely popular, and both built upon paradigms and ideas from earlier platforms, IRC’s popularity was relatively brief and when newer platforms appeared with features that afforded richer types of interaction, it was unable to keep up with these developments. Twitter on the other hand can keep innovating, and still sees major changes every few months, over a decade after its introduction.

In this way there is a clear difference between these platforms. One stuck in the early 1990s, the other thriving and continuously incorporating new ideas. Yet even though Twitter innovates, it is similarly stuck with its core structure of a ‘time line’, built out of tweets; if we look at the basic social structure of the platform, it has not changed much since 2006, even if later upgrades have added new features or shifted the focus onto certain types of use. It could be argued that despite all these changes, it is this core structure that is still Twitter’s strength. Similarly, even if IRC has not seen any major changes for over a decade, its core structure of channel-based chat proves attractive enough that it still has hundreds of thousands of regular users.

In the next set of chapters, I will therefore take a closer look at the relation between the platforms’ social configuration and what people use them for. This particularly in comparison with the impact of specific features; can popular genres of expression be linked to general structural characteristics of Twitter and IRC, or rather to particular features and affordances? The following chapters investigate these questions, guided by case studies of some of these genres.
6. Boots on the ground: citizen journalism and ideological trolling

In the previous two chapters, I have investigated the development of both IRC and Twitter, to map the various factors that together have the agency to shape a platform. I have described how besides the ideas a platform’s creator may have, a myriad of contextual factors play roles of varying importance in giving rise to affordances and features.

What is less clear is how these affordances and features are then appropriated by the people using these platforms. Especially in the case of affordances, there is an implicit expectation that they will facilitate particular types of expression; if we accept the view that affordances are a process, there must necessarily be an outcome. But these outcomes are not inherently clear; people may appropriate a platform for unforeseen purposes, types of usage that were embedded in the platform’s design without being intended by its creators. This is a process which the previous chapters showed glimpses of in their analyses of features emerging on IRC and Twitter as people repurpose their designs.

The goal in the following chapters is therefore to investigate in more detail how platforms facilitate and afford the emergence of specific types of expression, and what factors play a role in this. I do not aim to exhaustively explore all types of content possible on IRC and Twitter; rather, I focus on a number of particularly popular or impactful types of activity, to analyse what made these genres of online discourse so effective. My interest is thus in the process rather than the outcome; what is the relation between a platform’s affordances and the types of expression that are especially prominent on it? This relation can be clarified by exploring the reasons why some particularly impactful categories of expression have become prominent on both platforms. In this chapter, I take a closer look at two types of expression that have been prominent on both Twitter and IRC; citizen journalism and ideological trolling. I investigate the relation between the nature of these genres and the affordances and features of the platforms on which they materialise.
While an analysis of these genres does not cover the full breadth of expression that can be found on online social platforms, it provides a solid cursory inventory of the aspects that influence how a platform’s general features and affordances are appropriated for specific types of expression. It thus furthers the analysis begun in the previous chapters—adding an investigation of how a platform’s features are appropriated to the earlier study of these features themselves.

In the first half of this chapter, I focus on ideological trolling. With this term I mean to refer to people harassing people on social platforms who hold political views different than the author’s. ‘Trolling’ here does not just encompass the classical definition of the term as “posting [...] designed to attract predictable responses or flames” (Raymond, 2003c) but also a more general practice of online conversational misdirection, attempting to derail or redirect a discussion by assuming a misleading or deceptive persona and opinion, in line with Dahlberg’s usage of the term (2013). This combination of malicious traits has been a matter of considerable interest especially concerning Twitter’s role as a forum for political discussion in the early 2010s (see e.g. Cole, 2010; Gerbaudo, 2012 for a discussion of this), and played a significant role in the IRC ‘bot wars’ of the early 1990s as well. The ‘ideological’ component here is important as I focus on e.g. homophobic harassment, debates about feminism and election-related discussions rather than the more benign type of trolling that takes place in more casual context.

Concretely, I explore how the GamerGate controversy gained a foothold on Twitter and what tools people may use to tune out harassment. I contrast this with IRC’s handling of the ‘bot wars’ and the (often homophobic) harassment that was part of it. I then discuss 4chan-based harassment ‘operations’, which are more modern, organised forms of such trolling, elaborate campaigns in which social platforms like Twitter are ‘raided’ to push a particular point of view. Because such campaigns are often coordinated on IRC, they present an interesting case of overlap between the two platforms and can reveal the strengths and weaknesses of both in such activities.

In the second half of the chapter I focus on online citizen journalism—“ordinary people around the world who [share] rich insider accounts” (Murthy, 2011, p.779)— which is a type of social media use that has received much attention in the aftermath of major disasters such as earthquakes and tsunamis (see e.g. Bruns and Highfield,
2012) and as a channel for unfiltered, not traditionally journalistic reporting from conflict zones and political upheavals. Examples are the 1991 coup in Soviet Russia and the Gulf War on IRC, or the ‘Arab Spring’ in 2010 and more recently the Syrian civil war on Twitter (see e.g. Howard and Houssain, 2013; Lynch, et al., 2014). I explore what makes these platforms particularly conductive to citizen journalism, the tension between the anonymous nature of both platforms and the desire for accountability in journalism, and the role of authorities—i.e. those being criticised—in potentially censoring such grassroots journalism.

6.1. Trolling

6.1.1. Twitter’s trouble with trolls

Twitter is fertile ground for trolls. This observation is supported by a number of events during which this became especially apparent. One of the more prominent and perhaps transformative of these is what is referred to as ‘GamerGate’34, a convergence of many ongoing debates within the video game enthusiast subculture, particularly concerning perceived cronyism in games journalism and a fear of a ‘feminist agenda’ infiltrating video games criticism. The controversy started in 2014 with programmer Eron Gjoni, who published a blog post alleging that his ex-girlfriend, a game developer, had slept with a games journalist in exchange for favourable coverage of her work (these allegations were false, and Gjoni later retracted them). This quickly grew into a wider debate around the role of women in the games industry, and perceived cronyism in games journalism. Many of those involved and (often falsely) implicated were prolific users of Twitter, and through that platform were barraged with insults and threats, and in some cases had personal information (such as their home address) shared through tweets, a practice also known as ‘doxing’. Furthermore, people tried to ‘infiltrate’ both sides of the wider debate about games journalism and the perceived malignant influence of feminist thought, assuming fake identities and arguing against either side’s narrative from an assumed identity that was designed to evoke sympathy,

34 After the Watergate scandal in U.S.A. politics.
e.g. by pretending to be a sexual or ethnic minority while arguing that there was no need for video game design or criticism to acknowledge their experiences35.

This presents a useful case study for Twitter as a tool for debate and ideological trolling, as both were popular uses of the platform in this context. Obviously harassment and impersonation existed on Twitter before GamerGate—but what happened in 2014 made its potential for it a matter of public debate, perhaps because a number of relatively high-profile people were harassed especially viciously, or because many of those involved were journalists, thus giving them easier access to a platform through which to bring attention to the practices.

The fact that Twitter was an especially fruitful platform for this can be linked to a number of its features and affordances; these made the platform a powerful tool of manipulating debates, harassing, and shaming public figures, more so than other platforms that lacked certain features Twitter has. An important aspect of the platform here is the relatively high degree of anonymity people on it enjoy; the disposable nature of Twitter accounts made harassment and trolling relatively risk-free. In contrast with platforms like Facebook or Google Plus, Twitter requires very little personal information from people signing up; an e-mail address and a username is all that is needed to create an account. While personal information can always be fabricated regardless of the platform it is done on, Twitter thus requires less of it to begin with, and has no rules in place that explicitly forbid doing so. Whereas Facebook has been known to ask people to verify their identity (e.g. by asking them to submit a scan of their personal ID), Twitter does not seem concerned with the extent to which accounts on the platform map to real-world persons.

This anonymity works two ways. On the one hand, people can be relatively immune to repercussions that affect their personal life if they are careful not to share any personally identifying information on Twitter. It also means that managing multiple accounts is a feasible strategy for those who want to compartmentalize their online presence, or if one wants to run a separate account for their business, or for a Twitter bot they created. On the other hand, people using such anonymous accounts can also

35 A more detailed account of ‘GamerGate’ and the wider debates it was part of can be found in Game Changers by Dan Golding and Leena van Deventer (2016).
harass or even threaten others without there being any way to ascertain who they are and perhaps report them to authorities. While Twitter does document some information that could potentially be used to link accounts to specific internet connections, locations or even persons, a tweet or series of tweets may be perceived as harassment even if it does not, strictly, break Twitter’s own rules or the law.

On platforms that maintain a policy of linking accounts to offline identities, there would be an element of social propriety that could perhaps deter people from mischievous behaviour, adjusted to whatever their direct social context finds acceptable. Research does indicate that anonymity is a factor in how far people dare to go in bullying, insulting, and harassing others online (see for example Moore et al., 2012; Santana, 2013; Peddinti et al., 2014). With Twitter affording low-barrier anonymity and the fact that conversation is less limited to a specific circle of friends, obstacles that may prevent hate speech or other ‘sensitive’ content on platforms like Facebook are not present; an anonymous Twitter can be set up within minutes, and there is no policy forbidding the use of multiple accounts (in this it is similar to IRC, which however goes even further, not even requiring the e-mail address Twitter asks for).

6.1.2. Anonymity, access and account disposability

In the case of GamerGate, many of those involved were already active on Twitter, and thus could easily become targets of hate and insults on the platform. Given the nature of the controversy, which centred around games journalism, many of those involved were journalists, game developers or otherwise relatively high-profile people (within the context of video game enthusiasm). Many also had Twitter account that were easy to identify with their professional and offline selves, because due to their profession they were more or less public persons; they used Twitter to stay in touch with their readers, or sources, or the people who played their game, or those who subscribed to their YouTube channel. But anyone who wanted to send them threats, or harassing messages, or spread personal information about them could do so on Twitter from the anonymity of a basic account, which—thanks to Twitter’s “relaxed approach to identity” (Kirman, et al., 2012, p.125)—contained no personal information that could lead back to their identity and expose them to repercussions.
While in principle such anonymity is also possible on other platforms—despite e.g. Facebook’s ID-checking, it is in practice trivial to set up an account with false personal information—there are several factors that make it especially effective on Twitter. For one, relations between people on Twitter are asymmetric; there is no need to establish a mutual connection before being able to both read someone’s updates and send them messages. On Facebook, it is possible to send messages to people even if they have set their profile to be seen by friends only, but those messages will be shown separately, and can easily be ignored. On other platforms, like Snapchat, communication is completely limited to mutual friends, ensuring that anonymous accounts would not be able to harass without being approved by the recipient first. As on Twitter there is no functional difference between established high-profile accounts and anonymous, newly-created accounts when it came to access or visibility, there were no barriers between trolls and their targets in this case.

Instead, messages can be sent to anyone as long as their account is not set to private—which is the only way to limit conversation to an approved set of people. Private accounts however cannot interact with tweets from outside their group of pre-approved followers, which is in many cases an impediment to using Twitter; for example, one cannot send a tweet to customer support accounts in such cases, while that is a popular function of the platform. Private accounts will also not have their tweets show up on overview pages for hashtags or within search results. While that may be desirable for some, in the case of more public accounts such as those of journalists or game developers, private accounts are an antithesis to their typical usage of the platform, and thus they typically use public accounts\(^\text{36}\).

Public accounts however open themselves up to messages from anyone, which will show up on the same page as their conversations with known followers. Thus any malicious messages or harassment is difficult to avoid—and this was especially the case in 2014, when Twitter had very few features to block specific keywords or types of accounts (such features were added in 2016 and 2017). Combined with how easy it

\(^{36}\) They may however use this public/private setting of Twitter strategically. David Allen Green, a British legal blogger, made a habit of occasionally setting his main Twitter account (he operated three) to “private”, when he had no time to deal with the large volume of replies and mentions he typically received; temporarily making his account private ensured that he could only be contacted by those already following him, which represented a fraction of his usual audience (via retweets, et cetera).
was to set up a new Twitter account and how little personal information one had to share to do so, Twitter made an especially fertile ground for low-risk insults that were almost guaranteed to be seen by those on the receiving end. Thus trolling does not only require little investment of time and risk, but also has a relatively high return on that investment, as it is likely to be seen by many.

Another factor that is likely to make Twitter appear less ‘risky’ is that it is a relatively self-contained platform. Facebook accounts are used widely, not just for the core Facebook platform itself but also for its Messenger app and a large number of other platforms that offer Facebook-based login as an option. Likewise, YouTube accounts are also used for other Google products like Gmail or on Android-based smartphones. While Twitter can also be used to log in on other sites, it is notwithstanding its millions of users a far smaller platform than Facebook and Google, which are both used by over a billion people (Lardinois, 2016; Facebook, 2017). Therefore, in many cases people will use their Twitter account for Twitter only. Combined with the fact that it takes less effort to set up a new account on the platform, the perceived risk when engaging in behaviour that is forbidden or morally dubious is likely to be lower; there is simply less at stake when a Twitter account is lost.

Furthermore, Twitter has an API that makes it easy for people to send tweets automatically based on a set of conditions and triggers. While such Twitter bots are less versatile than their IRC equivalents, it is still easy to set up a service that tweets something on a schedule, or reacts with a pre-defined tweet when its account is mentioned or replied to by someone else.

All these factors—anonymity, access and disposable accounts—made Twitter a platform that had in some ways a low barrier of entry, but thereby also afforded low-risk harassment. GamerGate brought this fact to wider attention as it involved media-friendly subjects: the corruption of the mainstream press, feminism and the ‘bad’ influence of video games have been matters of public debate for the past decades. Following the increased attention to these less savoury aspects of Twitter that came to the forefront after GamerGate happened, many called for Twitter to provide features
to better deal with unsolicited tweets and insulting replies\textsuperscript{37} (see e.g. Dewey, 2013, in the *Washington Post*; Sanghani, 2013, in the *Telegraph*; Auerbach, 2013, in *Slate*). While it had been possible to ‘mute’ specific accounts since early 2014, which would hide their tweets from any timeline or overview page, there were very few other features that allowed people to counter harassing and otherwise malicious tweets. Both individual tweets and accounts could be ‘reported’, but there was no clear sense of what happened following such reports, and no indication of how many reports it would take for an account to be suspended by Twitter, or how serious an offence should be to make the platform do something about the one committing it. This was noted and complained about by many, and often described as one of the main factors that made Twitter such a harassment-prone platform. News magazine *Slate* for example argued that “Twitter is broken (...) and GamerGate Proves it” (Auerbach, 2014) and technology news site *Vox* described the platform as “one of the most visible and toxic arenas of the internet’s harassment-fueled culture war” in a retrospective (Romano, 2016).

Similar patterns emerged during other politically-charged episodes. One occasion in which the back-and-forth mudslinging was especially prevalent was during the election campaigns leading up to the 2016 presidential elections in the United States of America. As a prolific user of Twitter, then-candidate Donald Trump made the platform a focal point of both his own campaign and American political discourse in general. The same patterns of harassment, anonymous accounts and bots that made the Twitter discourse surrounding GamerGate so heated were repeated again, on a grander scale. Trump’s tweets routinely received hundreds of thousands of likes and retweets, many of which were posted by automated accounts (Twitter Inc. and USSCJ, 2018); supporters of both Trump and his opponents received insults and threats, some again automatically posted by bots in response to using specific relevant phrases in tweets. As in the case of GamerGate, bots contributed a significant proportion of the tweets involved, most supporting Trump, though “a significant number of (human) users still

\textsuperscript{37} In some cases, this involved very large volumes of tweets; per a survey from U.S. magazine *Newsweek*, Zoë Quinn received 10,400 tweets tagged with #GamerGate in 7 weeks’ time; during the same time span, journalist Leigh Alexander – who wrote a controversial article in response to the events – was mentioned 13,926 times. On the other hand, Nathan Grayson, the journalist Quinn was falsely accused of sleeping with in exchange for favourable coverage, received only 732 tweets (Wofford 2014, in *Newsweek*).
use Twitter for relatively neutral political expression in critical moments” (Kollyani et al., 2016).

In late 2016 and early 2017, Twitter introduced a set of features that were maybe not a direct response to the explosive USA presidential election, but certainly could be used to effectively deal with the behaviour many had complained about. Addressing precisely those affordances that made Twitter so suitable for anonymous insults and trolling, the platform made it possible to ignore tweets containing specific keywords, or those written by anonymous people, or by people not being followed. It also added what it called a ‘quality filter’, which hides tweets containing “lower-quality content [...]”, for example, duplicate Tweets or content that appears to be automated” (Twitter, 2017), making it easier for people to ignore the anonymous insults that had been plaguing the platform in the preceding months.

This is an interesting development, especially considering Twitter’s earlier responses to demands from people using the platform, e.g. in the cases of hashtags and @replies. The important difference here is that Twitter introduced new features to prevent certain ways of using the platform, or at least hide such behaviour from those on the receiving end of it, mostly on an opt-in basis. In earlier instances, changes that can be seen as a direct response to usage patterns often served to make such patterns part of the ‘official’ Twitter experience, for example by making hashtags clickable or adding a separate page to track tweets containing replies. This obviously was not the case when dealing with unpleasant tweets, and instead Twitter came up with wholly new features designed to limit their impact, though stopping short of outright removing them—trolls can still troll, but their victims have tools to avoid seeing them do so now.

It is also useful to consider that most of these muting-related features deal with @replies. As established in chapter four, @replies are fundamentally at odds with Twitter’s core concept of a (semi-)chronological timeline of tweets. The introduction of muting to counter harassing tweets indicates that perhaps @replies are problematic in another way as well; as soon as Twitter was no longer just about ‘sharing status’, but became a two-way street where people can talk to each other—regardless of whether they have a pre-existing relationship—the platform needs a relatively complicated set of fine-grained filters to keep using the platform enjoyable. On other platforms, in
many cases this is circumvented by making messages from strangers less visible or impossible to send, as is the case on Facebook and Snapchat. Yet other platforms—including IRC, which has had an /ignore command for the longest time—already relied on the features for muting and ignoring that Twitter implemented so relatively late in its life. Thus, replies and conversations are features of Twitter that many appreciate, but that also bring problems—and problematic affordances—with them, as evidenced by the controversies that can be traced back to them and the on-going attempts by Twitter to tweak their designs.

6.1.3. Trolling on IRC—bot wars and micro-platforms

As a comparison, IRC’s way of handling conversations and private messages is relevant here. As established, IRC is set up very differently than Twitter, being based as it is on channels rather than timelines. This already limits the exposure to ‘trolls’ that would want to insult or otherwise harass someone for, for example, their political convictions. There is no way to see someone doing so without being in the same channel as them, or knowing who they are outside of IRC through other means, and thus any harassment is likely to be limited to a specific channel or perhaps a group of channels that are related to each other. On the other hand, as IRC channels are conveniently labelled by their theme, such channels may be easy enough to find for a would-be troll, especially given the fact that many IRC networks offer a list of all channels on the network.

As on Twitter, on IRC there are links between harassment, trolling and bots. On both platforms, bots are sometimes used as methods to automate trolling and harassment. In IRC’s case, such bots are a little more versatile than Twitter’s; they may incessantly send messages to a channel or user, attempt to assume the channel’s ‘moderator’ position and kick everyone out, or join and quit the channel in rapid succession. As described in chapter five, some of the earlier general-purpose IRC bots were designed to effectively deal with such trolling. In fact, Eggdrop, one of the earlier IRC bots, which is still very popular, was originally created to manage mischievous people trying to disrupt discussion in #gayteen, a channel where gay teenagers met. Eggdrop was created “against constant fights for [#gayteen’s] control and homophobic raids against the channel” (Latzko-Toth, 2014, p.589). Its author, Robey Pointer,
“regularly hung out in [two channels], #gaysex and #gayteen, [which] were being attacked and harassed daily” (Leonard, 1997, p.p108). While harassment was by no means exclusive to LGBT-themed channels, they did attract more trolls than usual—“#gaysex’s name alone ensured it was a popular target for […] annoybots and clonebots38 and LGBT-themed channels “[received] a steady stream of drive-by-style attacks in which troublemakers cruised through [the] chat rooms spewing homophobic slurs” (ibid.)

In that sense the platform was not very different from Twitter, or any other platform really—anything remotely politically controversial is generally low-hanging fruit for trolls. Perhaps the main difference is that on IRC, channels are hierarchically organised. Some of the people in a channel will be operators (‘ops’, in short), who have the power to—among other things—remove people from the channel, temporarily or permanently. Thus anyone harassing someone inside a channel can easily be removed from the conversation, and some networks offer the option to block people from saying phrases with pre-defined keywords in them. While this is in some ways similar to how Twitter makes it possible to block and mute people and phrases, the difference here is that such moderating is done by the operators, and assuming this is done well, other people in the channel need not be concerned with keeping it clean from harassment and trolling. On Twitter, keeping a timeline clean is left up to the owner of the account for which that timeline is generated, and Twitter itself does not play a significant role in this beyond providing the tools to use for that purpose; while they clearly have the means to detect ‘low quality content’, evidenced by an option to block it, they leave it up to the people using their platform to decide whether that content should be displayed or not. On IRC, any channel can decide to preemptively ban certain people or phrases, and that channel is then a ‘micro-platform’ which, at least to one standard, is a safe space for civil conversation without the fear of being insulted just for speaking out.

Conceptualizing channels on IRC as ‘micro-platforms’ here is key to understanding the differences between IRC and Twitter in how susceptible they are to disruption by trolls and other mischievous actors. Recall again the earlier discussion on what defines

38 Annoybots were bots that were designed to, as their name implies, annoy, e.g. by spamming. Clonebots would “clone” themselves when kicked from a channel and rejoin it, making it very difficult to keep them out of one.
a platform, and the notion that a platform ‘makes things possible’. While an IRC channel is always constrained by both the features of IRC itself and the network it is a part of, the people still have considerable agency in defining what is and is not possible inside their particular channel. There is a subset of people that have the power to enforce any rules they set, by kicking and banning bad actors; and a set of network features such as phrase filters that allows them to embed their rules for the channel in the software, enforcing them on a level where they cannot be broken, only circumvented. Twitter on the other hand has nothing that can be described as a ‘micro-platform’ in such a way—there is no moderation on Twitter, and no hashtags or groups with more stringent or specific rules. Twitter does not offer the level of control that channels on IRC do, and furthermore does not allow appointing someone to moderate and filter the conversation for others, in lieu of Twitter itself doing so. Thus whereas IRC gives the people using it agency in controlling and guiding conversation, Twitter does this far less potently, offering methods of hiding certain messages but not of preventing them from being sent in the first place.

This is not to say that trolling on IRC is impossible—but it can be contained more easily, and people have a wider array of tools to deal with it. Twitter has, essentially, two levels of visibility: private accounts, which only approved followers can see, and public accounts, which anyone can see. In the latter case, which is preferred by many, trolling and harassment can come from virtually anyone. And while on Twitter bots are limited to automated messages, on IRC they can be used to moderate the channel, and thus quickly became important factors in dealing with trolling, ‘patrolling’ channels and looking out for anyone displaying disruptive behaviour; Andrew Leonard describes how “Valis, the motorcycle-bull-dyke bot in #gayteen, is an eggdrop bot; so are Habanero and Jalapeno, two recent patrollers of #gaysex” (2017, .108) and how “channel creators, desperate for peace, set up eggdrop bots, modified for local circumstances, in channel after channel.” (ibid.) While there was nothing particularly advanced about these bots, simply setting them up to automatically kick people who spammed or used specific homophobic slurs was already an improvement. Twitter has no such bots, and any moderating is left to Twitter itself, which is typically opaque and discloses little about its moderation processes. Thus trolling has low risk and a
potentially enormous reward on that platform, something evidenced by the prominence of controversial debates there, such as GamerGate.

6.1.4. Special ops: coordinated trolling on Twitter and IRC

Another factor in Twitter’s prominence as a catalyst for harassment during GamerGate, and again an important difference from how discussions evolve on IRC, was the potential for tweets to go ‘viral’, meaning that they reach many people in a relatively short time. Twitter’s retweeting feature can in some cases make a tweet reach an exponentially expanding audience, as each retweet makes a tweet visible to all those following the retweeter; especially in the case of Twitter accounts with many followers, this can grow the audience for a tweet by millions of people with each retweet. Thus even if people did not follow those directly involved in the various Twitter-based back-and-forths about ‘ethics in game journalism’, they could easily get wind of it via people they did follow retweeting it, then commenting on it themselves, et cetera, ensuring that the discussion quickly spread throughout those on Twitter who kept an eye on anything video game-related.

Together with hashtags, which also heighten visibility through the ‘trending topics’ lists and the fact that they can be clicked for a quick overview of the debate surrounding them, the propensity of hotly debated content to go ‘viral’ made the debate quickly explode in terms of tweet volume. Some trolls explicitly appropriated these affordances to try and influence the debate; on the forum 4chan, an anonymous poster39 announced a “SPECIAL JAMMING OP” for “TWITTERFAGS40”, giving detailed instructions on how to infiltrate the debate about minority representation in the video games industry. The post instructs people to use specific hashtags (and retweet other tweets containing it), and tells them what subjects to mention in their tweets and offers good and bad examples. It also details the goal of the “operation”: to make it

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39 Most people on 4chan post anonymously, and the site has no concept of user accounts in the traditional sense. Hence, posts can rarely be reliably attributed to an author. Furthermore, posts are deleted after a short period of time, making later references difficult; most references here are based on screenshots, often from secondary sources. See Gabrielle Coleman’s 2014 book Hacker, Hoaxer, Whistleblower for a broader discussion of 4chan’s anonymous culture.

40 The ‘-fags’ suffix is used on 4chan as a general synonym for ‘people’; ‘twitterfags’ thus means ‘people on Twitter’ and is not a reference to GamerGate’s focus on feminism and sexual minorities.
appear as if minorities (ethnic or sexual) are unhappy about perceived “SJWs\(^{41}\)” attempting to steer the industry in a more minority-friendly direction.

Another, similar post, also by an anonymous poster, goes into more detail on how to set up a convincing ‘fake’ Twitter account, describing steps such as “make a few tweets proclaiming your newness”, “make a few tweets about #GamerGate”, “increase your visibility by following people—search the #GamerGate tag and follow people you like”. While such instructions are not much different from the average ‘Twitter for dummies’ guide, the post later offers advice suggesting a more malicious usage of the platform:

for extra class, present yourselves as normal people who sjws by their own standards should sympathize with, like an indian cab driver who can’t read traffic signs. (this requires extensive shitposting\(^{42}\) experience) (quoted in Futrelle, 2014, on We Hunted the Mammoth)

\(^{41}\) An acronym, often used derogatorily, for “Social Justice Warrior”; people perceived to campaign for ‘social justice’ for minorities and oppressed people in an overly zealous way.

\(^{42}\) A somewhat nebulous term of which the precise meaning may differ from context to context, but that in general refers to contributions to online discussions that are of little value (beyond, perhaps, humour), or intended to invite adverse responses—in that, it is comparable to trolling. As trolling in many cases involves defending an opinion or argument that people do not necessarily hold themselves but defend solely for the purpose of triggering others’ anger, it is not unreasonable to say that it would be a useful skill when impersonating someone on Twitter.
While on 4chan it is never clear how seriously a post should be taken, these are multiple examples describing relatively elaborate strategies of systematically influencing the debate. Virtually all Twitter affordances described earlier are referred to explicitly or implicitly, indicating that they were indeed a factor of note in the discourse, not just as a passive force unconsciously guiding people’s usage of the platform but also as an explicit set of tools through which to manipulate the debate. People are invited to rally around a hashtag to increase visibility; to follow and respond to people who are likely to follow back and retweet, again for increased visibility; and to craft an identity such that it fits the message, rather than their own persona, to be more effective.

Similar calls to action were seen on 4chan during the run-up to the 2016 United States presidential elections, famously won by Donald Trump. 4chan was a rich source of memes about Trump’s qualities as a candidate, but people on it also came up with
various schemes to steer the debate on platforms like Twitter in a pro-Trump direction via tactics similar to those employed during GamerGate. These were sometimes rather elaborate:

/pol/ should have an A team focused to pretending to be Hillary supporters and a B team focused on Sanders and getting them to go with Stein. We should have short-term and long-term goals for both sides. One example, a hashtag:

A lot of news sources I saw this week hinted that the reason Bernie hasn’t dropped out is he fears it’ll fuck up 40 years of his legacy. MSNBC reporting that Bern looking for ANY reason to not endorse HRC.- Team B should start a hashtag that encourages that. A long-term one. The guy wants the excuse, let’s give it to him by starting the fire. [...] Any ideas for the hashtag for team B? (quoted in Howell O’Neill, 2014, on The Daily Dot)

It is not clear that this proposal ever amounted to any serious action—but either way, again people were aware of how hashtags could be used to give prominence to a certain idea, and how using fake identities in tandem could give increased credence to their message. It is noteworthy that such proposals virtually always incorporate the use of hashtags, and more often than not are focused on Twitter over other popular social media platforms like Facebook; clearly Twitter is perceived to afford such manipulation better. That such tactics can actually succeed in putting something on Twitter’s ‘agenda’ is evidenced by ‘#EndFathersDay’ another hashtag invented on one of 4chan’s boards as part of a campaign in which forum members pretended to be feminists angry at the perceived inequality inherent to celebrating father’s day (see also Ganzer, 2014). A post on /pol/, 4chan’s subforum for ‘politically incorrect’ discussion on which many of these operations originated, contained a passionate appeal to start posting anti-father’s day messages:

[C]alling on all feminists and social justice warriors to join us in a campaign to redefine this disgustingly misogynistic holiday.

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43 See Appendix A for more information on the tweets that were consulted.
#EndFathersDay in its present form, if not entirely. We will be
descending upon Twitter and Tumblr to get the message out that this
patriarchal ‘holiday’ has no place in our society. (quoted in Broderick,
2014, on BuzzFeed News)

While in isolation the post could be read as a sincere call to action[44], the context
and the author’s chosen nickname “Straw Feminist” makes it clear that this is anything
but. Technology blog The Daily Dot reported that in one day the #EndFathersDay
hashtag was used over 40,000 times, often enough to put it in various ‘Trending
Topics’ lists and seemingly even convincing some people that father’s day is, indeed, a
misogynistic celebration; a cursory look at the overview page for the hashtag reveals
many tweets that are clearly sent by trolls but also more sincere ones such as “I Want
To #EndFathersDay For All The People Who's Dad Was A Piece Of Shit.” or conversely
“these endfathersday tweets are why feminists are not taken seriously”. A closer look
at the profiles and Twitter timelines of these authors reveals that they regularly post
tweets that support the reading of these particular messages as genuine expressions
of, respectively, support or derision of #endfathersday; both have been using Twitter
for a while, tweet about mundane events and occasionally post politically charged
tweets that align with the position espoused in these particular messages; and
regularly interact with followers.

Conversely, contributions to the debate by ‘sockpuppet’ accounts are usually not
hard to identify as being insincere; as technology magazine Ars Technica wrote in an
editorial on GamerGate, one had to look little further than “their low post counts, the
fact that they tweeted about little other than #GamerGate and #notyourshield, and
reverse image searches of their avatars that showed the photos to belong to people
who likely didn’t own the accounts in question” (Johnston, 2014). But as easy as it was
for a discerning viewer to check an account’s bona fides, it is unlikely that someone
casually viewing their timeline or a hashtag page would have done so.

IRC is less useful for such purposes owing to its more hierarchical social structure,
but at least during GamerGate it was used as a platform for coordinating the organised

[44] Context is especially important in such cases; an oft-invoked maxim in online discussions is ‘Poe’s
Law’, asserting that “[w]ithout a winking smiley or other blatant display of humor, it is utterly impossible
to parody a Creationist in such a way that someone won’t mistake for the genuine article.” (2015).
manipulation of the debate alluded to in the 4chan posts discussed above. Zoë Quinn, who had been implicated in Gjoni’s blog post and thus was one of the major players in the GamerGate debate, joined some of these channels herself and shared fragmentary logs of the chat in them (ibid.). These logs show discourse like that in the threads on 4chan where ‘operations’ were announced and people were called to action. The difference is that, given IRC’s nature as a chat platform, the discussion is more fast-paced and conversation-like, and new courses of action are proposed, embraced or discouraged at a quick pace. There is also an extended component of reflective discussion about the whole affair, with people discussing to what extent tweets from the ‘other camp’ are worth engaging with and how particular game developers fit into the debate.

What is proposed in these conversations on Twitter and IRC is not strictly harassment, and posts often contain a request to not be too offensive; to “remain calm, don’t lose your spaghetti45, and be the better person”. The impression is that these people want to bring their side of the debate to the forefront, even if they attempt to do so by using forged identities and manipulating people. Outright harassment however would not serve that goal and it is thus understandable that there is no encouragement to employ it, even if figures who were harassed (such as Quinn and, on another level, Hillary Clinton) are always referred to derisively. But insults are a small step from creating a fake account to promote a fake narrative that is crafted to put an opponent in a bad light, especially given the low risk associated with the practice. And in both cases, the same affordances are at work—anonymity, viral potential and the ease of setting up a ‘sockpuppet’ account.

This situation presents an interesting contrast. On the one hand, such projects are a grass-roots phenomenon; they originate on forums like 4chan, with anonymous users, rather than inside the political parties they choose to support. On the other hand, these activists then go on to promote their cause by fabricating grassroots activism from a different group of people. Such fabrication is sometimes referred to as ‘astroturfing’, after the brand of artificial grass, usually in a corporate context: “fake

45 A reference to the rapper Eminem’s 2002 song Lose Yourself, which tells the story of an up-and-coming rapper’s nervousness about a rap battle he’s about to have, from which the line “there’s vomit on his sweater already; mom’s spaghetti” is appropriated as a metaphor for losing one’s cool.
grassroots organizations usually sponsored by large corporations to support any arguments or claims in their favour, or to challenge and deny those against them” (Cho, et al., 2011, p.571). In the case of the 4chan campaigns discussed here, there is no such corporate oversight. While there are clearly causes that are rallied around (Donald Trump as a presidential candidate for the U.S. election campaign, and ‘ethics in game journalism’ in the case of GamerGate) these are not involved with the astroturfing\textsuperscript{46}, which seems to be borne from equal parts outrage and desire to troll. But anyhow 4chan’s infiltration of Twitter as a forum for ideologically-tinted debate illustrates how the platform’s mix of anonymity and visibility, and the lack of barriers in contacting someone such as Facebook and SnapChat have, makes it especially susceptible to such ‘grassroots astroturfing’.

\section*{6.1.5. IRC as a persistent tool for coordination}

Twitter and IRC here are thus two platforms that are especially useful in such ‘astroturf’ campaigns: Twitter as a tool to actually carry out the infiltration, and IRC to coordinate it. The latter’s role should be placed in historical perspective; IRC has a longer history as a tool for coordinating all kinds of projects: one of the larger networks on the platform, Freenode, is home to many channels dedicated to discussing the development of a variety of open source software projects. It also served as the main inspiration for Slack, the more recent business tool explicitly marketed as a platform to coordinate business matters and company projects. Again, IRC has a number of affordances that make it especially suitable for this purpose, historically even more so than nowadays. While platforms like Slack and Discord\textsuperscript{47} offer a more user-friendly alternative, they are a relatively recent phenomenon, and for a long time IRC was the go-to platform for such ‘teleconferencing’; 4chan’s use of the platform shows that it still has a place in this niche.

\textsuperscript{46} At least in this case. Astroturfing is not limited to these examples and is a tactic used by political campaigns as well; see e.g. Ratkiewicz, et al., 2011, who analyse Twitter timelines to detect seemingly spontaneous messages of support for a candidate, and political memes, as centrally organized campaigns.

\textsuperscript{47} Discord was in fact a popular tool for coordinating extreme-right activism in the United States, mirroring IRC’s role in such activities; many Discord ‘servers’ (analogous to IRC’s channels) were shut down in the aftermath of neo-nazi protests in Charlottesville, in August 2017, for facilitating coordination of such events (Roose, 2017, in the \textit{New York Times}).
One of the reasons for this is that IRC’s core social structure, that of the channel-based group chat, almost seems purpose-made for project coordination: people can easily set up a channel dedicated to (part of) their project, invite all relevant contributors to the project to join it and start using it to discuss issues. This obviously requires all those involved to be connected to IRC, which is perhaps one of the reasons why Slack and Discord have become so popular in a short time while IRC’s numbers continue to decline. The newer platforms are available through well-designed apps that run on any platform and were created so that there is no need to fiddle with network addresses, port numbers or NickServs, while these are a given on IRC. This is perhaps also the reason why IRC is still relatively popular for coordinating software projects, as programmers and people who are otherwise technology-savvy will have comparatively less difficulty with the more arcane aspects of IRC, as they are in many cases reminiscent of the everyday tasks of configuration that are part of their work.

But even before Slack, group chat platforms existed; Facebook has had group pages since 2010, Skype is in a way built on the promise of smooth group conversations, and chat platforms like MSN Messenger and ICQ offered the option of chatting with groups in the late nineties. And looking at IRC’s number of users, it is likely that some people switched to those platforms as they came available. Yet IRC and platforms like it endure. One factor that continues to speak in its favour when it comes to coordinating projects is that one can easily set up their own server, and make channels private or invite-only; an attractive prospect for anything secretive or sensitive. Furthermore, most IRC networks do not require personal information to connect to them, not even an e-mail address; a level of anonymization not even Twitter offers. IRC has also always been widely available, even on platforms like Linux and MacOS, which until recently often received far less support in terms of applications and clients than Microsoft’s ubiquitous Windows operating system. The former two operating systems however have traditionally been popular with software developers, so especially during the nineties IRC may well have been one of the only platforms actually available on their operating system of choice. Finally, IRC’s ease of automation combined with the conversational set-up of its chat channels afforded, for example, bots that would automatically post a link and short description of any recent changes to whatever software project a channel was dedicated to; these would then naturally become part
of on-going conversations or prompt new discussion. In the case of more esoteric projects like 4chan’s various trolling and misinformation operations such an affordance could still be useful; for example, a bot could repeat tweets by relevant persons in the chat channel, or keep track of links posted under a certain hashtag. Consider the following exchange in #ircv3, the IRC channel through which the ircv3 working group coordinates work on the revision of the IRC standard:

<N.D> Z. commented on issue #152: New look and font—[https://github.com/ircv3/]
<N.Z> ah
<N.D> Z.: [logo-versions.svg];D
<N.Z> D.: are they available in svg format

The bot N.D. reports that Z. has posted a message online about the project’s new look and font, and prompted by this, D. sends him a link for a new logo he has been working on, after which Z. asks in what file formats the linked logos are available. A chat platform is especially suited to such quick questions, while a web forum like Twitter may be suitable for more substantial feedback that should be seen by a wider circle of people. Through bots, IRC can complement the other platform, and offer a place for hands-on discussion while more specialised activity takes place on other sites that are more suited to it. While it is less suitable as a public forum for debate, where Twitter is stronger, it is thus a suitable avenue for more casual, meta-level coordination and discussion that may inform further action on more public platforms.

6.2. Citizen journalism

6.2.1. Early days of online citizen journalism—IRC and media blackouts

Twitter and IRC therefore both have distinct but complementary roles when it comes to activism, contemporary debate, et cetera. Historically, both platforms have also had another function when it comes to such things: informing ‘the public’. Taking on the role of a news medium that goes where more traditional news media cannot or do not want to go, both Twitter and IRC have at different times been used to

48 URLs redacted
disseminate footage of political and societal conflicts in countries with low press freedom.

In IRC’s case, the most famous example is perhaps the August Coup in the Soviet Union, an attempt in 1991 to oust then-president Mikhail Gorbachev. While popularly IRC is cited as having circumvented a “media blackout” (see e.g. Sajithra and Patil, 2013, p.71), in reality IRC acted more as a news aggregator than a clandestine news front; chat logs of conversations during the event show that people mostly shared press releases, telex messages and transcripts of radio broadcasts. But in that aspect it did offer a unique overview of the events; while the reports quoted were from various public sources—from the BBC to the USSR politburo—the nature of IRC as a rolling stream of messages made the fragmentary coverage into a more comprehensive impression of what was going on in Moscow, allowing people to easily compare and contrast the news from sometimes conflicting sources.

The chat logs, some of which have been archived by ibiblio, an online library, show people volunteering to cover specific news sources, and changing their nickname to unambiguously show who they are quoting: people named “IDFradio”, “ARD”, “USENET”, “Swe-TV”, “Radio_ffn” and “WDR” are important contributors to the discussion. It should be noted here that such nicknames do not seem to have been meant as an indication that these people were officially affiliated with these media outlets (the ‘WDR’ account complains about not being able to listen to a news broadcast because of work distractions, for example); rather, it indicates an ad-hoc division of labour where people who had access to a particular news source by virtue of e.g. their location dedicated themselves to repeating what was said on there. Notably, the creator of IRC, Jarkko Oikarinen, is in there reporting on both Russian and Finnish tv broadcasts under his nickname ‘WiZ’, noting that “Moscow tv is a tv station which can be seen in some parts of Finland”.

Mixed in with these news fragments is discussion and links to discussions about the topic on other platforms. Among those in the channel, there was a clear sense of responsibility and the seriousness of the situation. Compared to 4chan’s ‘operations’ to involve themselves in various political debates, the IRC logs show a distinct lack of troll-like behaviour, and any indication of such was squashed by impassionate messages such as the following:
PLEASE STOP FLOODING THE ONLY NARROW CHANNEL WITH BOGUS MESSAGES. WITH SILLY QUESTIONS. NOTE THAT IT'S NEITHER A TOY NOR A MEAN TO. REACH TO YOUR RELATIVES OR FRIENDS. WE NEED THE BANDWIDTH TO HELP. TO ORGANIZE THE RESISTANCE, PLEASE, DO NOT (EVEN UNINTENTIONALLY). HELP THESE FASCISTS! BEFORE SENDING SOMETHING TO SOVIET UNION PLEASE. THINK TWICE (OR BETTER THRICE). THANK YOU! V. DEMOS, Moscow, USSR

Whether this was the first instance of an internet platform being used to provide a real-time aggregation of news about some newsworthy event is hard to say; it certainly was one of the more prominent early examples.

Ibiblio, the organisation that has archived the chat logs discussed above, also hosts logs for discussions about several other events in its archives, such as for the 1992 U.S. presidential elections, the Oklahoma City bombing, various events that were part of the Gulf War and a number of less high-profile events such as question-and-answer sessions with game designers and ‘IRC weddings’, role-playing sessions in which two people ‘marry’ online (which are discussed in more detail in chapter seven).

The more serious of those discussions of then-recent events follow the same pattern as the coverage of the Soviet Russian coup—people reporting any scrap of news or information that comes up from any source, together constituting a chaotic but comprehensive account of publicly available information. Sometimes however people involved in the conflicts or at least affected by them do provide information that is more ‘direct’ than what the news networks report, something especially apparent in the archived chat logs that discuss the 1991 Gulf War.

<R.> Is there anybody there? I am fine. Just got the damn gas mask off. Sorry
<R.> Tel-Aviv was hit.
<R.> There was an attack on Israel, Patriot missiles were fired, results unknown (Israeli Radio + my ears)
<R.> (My ears - I mean I heard the explosion)

There is a geographical bias here—most of these bits are from people in Israel, perhaps the only country involved in the conflict that had relatively widespread
internet availability at the time. This did not go unnoticed by those discussing the conflict on IRC:

<H.> who's in baghdad here?
<L.> I dont think bagdahd is on the net =]
<B.> No arab countrys on the net..

Such conversations are reminiscent of Twitter and other social media as used in later conflicts, e.g. the Syrian Civil War in the 2010s—with the difference that the internet was far more widespread and people from all sides of the conflict used social media to share news from the conflict zones.

Even with the lower volume of messages, conversations such as those quoted above could easily get out of hand and devolve into heated debates or speculation. In all these logs, it is clear that people quickly volunteered to make sure the reporting stayed ‘on topic’ and was not diluted with speculation—in the words of a moderator on the #oklahoma channel during the Oklahoma City bombing attacks in 1995:

#oklahoma: This channel exists for REPORTING info about the bombing, not for chatter. Those with a REPORT ask douglas or Out for a +v. This channel is moderated on purpose. No nick changing, flooding, etc allowed.

Logs of people covering the ongoing events of some of the more violent conflicts of the Gulf War show a process that is almost identical to what happened during the more or less contemporary coup in Soviet Russia. People changed their nicknames to the names of TV and radio stations they were covering, and posted live transcriptions of radio and TV broadcasts. But from what they said it is clear that they were not so much generating news as collecting it. As one of those contributing said:

gotta go, congrats to everyone of the biggest irc [channel] ever. well be - waiting daylight in baghdad and at least cnn should be able to tell what has - happened.

This didn’t stop those present from commenting on what was being shared and developing their own theories. In the case of the Gulf War, this was relatively innocent, perhaps because those discussing the matter were often far removed from the Middle
East and thus less directly involved—though this did not stop one contributor from bringing up “a strange rumor about a sniper on Californias I-5” (this was not referred to again in later conversation).

One of the issues with online citizen journalism, the “lack of ethics and skills associated with professional journalism” (Dean, 2010, p.45) is obvious in such examples. The coverage discussed above, IRC-based aggregation of mainstream news with some personal anecdote mixed in, then matches Jodi Dean’s characterization of blog-based citizen journalism:

Few do new and original reporting but instead [they] remediate the findings of real journalists as they mix into them their own strident, often vicious, points of view. (ibid.)

However, at the time mainstream news media often did not have a significant online presence and was therefore not as quickly available and widely disseminated as it could be on IRC; in that sense there were, at least in this case, some tangible advantages to the crowd-sourced online approach, even if in the side-lines some questionable ‘reporting’ such as that on the California Sniper was muddling up the picture.

Speculation can have more serious consequences though, and what careless moderation or a lack of it can lead to perhaps best became apparent during the aftermath of the bombing attacks during the Boston Marathon, in 2013. Again IRC was used to aggregate the latest news on the unfolding events; other sites like Reddit were important platforms of such discussion as well, and people often participated on both platforms; Reddit was a place for longer discussions and posting media, while IRC was useful for quick-paced conversation and rapid responses to new information. In the end, based on fragmentary news reports and blurry photos, people concluded that they had identified the terrorists; the persons in question later turned out not to have been involved at all, and in fact turned out to have been dead for weeks. In response, Reddit tightened its rules about “witch hunts” and “doxing” afterwards (Upvoted, 2013).

IRC, of course, had no central rules that could be changed, and anyway one could always set up a private side channel for speculation. But the course of events
highlights how a platform that facilitates the feverish hunt for more information about a recent event also affords discussion and especially speculation based on that information; even when it might be wiser to wait until more information is available to draw such conclusions. IRC is far from the only platform affected by this behaviour, but given its real-time nature it is a potent example of it, and the emphasis the archived live reports of the Soviet coup, et cetera, place on moderation shows that people were aware of this even in the early days of the platform. Similar to the explicit references to Twitter’s mechanisms for virality in the case of 4chan’s ‘operations’, this highlights how people are sometimes acutely aware of the affordances (and anti-affordances) of these platforms and adjust their behaviour to them.

6.2.2. Twitter’s citizen journalism: The Arab Spring and Green Revolution

Twitter lends itself to speculation like in the Boston Marathon Bomber case less well, as it is far more difficult to engage in a sustained group discussion on it, and such discussions are often at the heart of the type of speculation or ‘witch hunt’ discussed here. While tweets may be, and are used as the basis for further speculation on other platforms such as Reddit, Twitter itself has no easy way to start a self-contained many-to-many discussion thread that often forms the basis of such speculation. But as a publication platform, a place to publish an opinion or a short reaction to an event it is potent; a worldwide audience can be reached if a tweet picks up momentum, and there is nothing between the author and that audience except Twitter’s interface. The platform is thus often utilised as both a source of, and a platform for information that is not typically covered by more mainstream media; such as unedited video or text accounts that are posted only minutes after an event, or highly personal and more obscure takes on events that bring new perspectives to the debate.

A prominent example of Twitter being used for such a purpose is the Arab Spring, a series of political developments in the Middle East in the spring of 2011, in which Twitter served as a tool for such “ambient journalism”, where “citizens are participating in the observation, selection, filtering, distribution and interpretation of events” (Hermida, 2010). While the extent of this practice in the case of the Arab Spring has often been overstated, it did play a role in these events, “several millions of tweets containing the hashtags #libya or #egypt were generated during 2011, both by
directly affected citizens of these countries and by onlookers from further afield” (Bruns et al., 2013, p.871). There was a tension here between the local regimes, many of which censored media coverage of the events, and Twitter, an American platform that was harder to censor given the fact that any coverage of the events was distributed among thousands of tweets and accounts.

Twitter was also available via text messaging, and various phone and desktop apps49, so people could get messages out to the platform even when the local regime blocked internet access. Much has been made of the impact of Twitter as a tool of fighting oppression, defying governments, spreading activist messages, et cetera, though the actual impact social media tools have had has been questioned. For example, on the topic of Iran’s 2009 ‘Green Revolution’, Ali Honari notes that “a real concrete current of dissent was at work on the [streets] and explaining the whole phenomenon in terms of media events does injustice to the reality on the ground” (2013, p.145) though he also argues that “collective virtual activities [can] manifest themselves in the outcome of a tangible social movement” (ibid., p.164).

It has also been noted that much of the online discourse surrounding these events originated outside the countries they concerned and from people whose authenticity was questionable. As polemicist Evgeny Morozov points out in The Net Delusion, Twitter was awash with tweets about the activism surrounding the Iranian presidential elections in 2009, but a large part of those tweets originated with the Iranian diaspora, or foreign sympathizers; others have also argued that “Twitter was hardly used by Iranian citizens” (Honari, 2015) and that its role was “significantly limited” (Rahimi, 2011). In spite of this, the platforms were instrumental in bringing the events to the attention of Western media and audiences, giving them an implicit geopolitical role even if their local impact was limited. Morozov captures this ambiguity well in the following passage:

49 Twitter also set up a voice mail service for activists in Egypt, in collaboration with Google, via which people could post messages to Twitter by calling a phone line and delivering their tweet via speech; this allowed people to post to Twitter even when internet and text messaging were completely unavailable (Siegl, 2011, on TechCrunch). It is unclear how much impact the service had, or even to what extent it can be considered as being part of Twitter; tweets were not actually transcribed voice mails but merely links to an off-Twitter audio file. As of 2017, the audio files are no longer available.
As many sympathizers of the Green Movement began changing their Twitter location status to Tehran to confuse Iranian authorities, it also became nearly impossible to tell whether the people supposedly “tweeting” from Iran were in Tehran or in, say, Los Angeles. One of the most active Twitter users sharing the news about the protests, “oxfordgirl,” was an Iranian journalist residing in the English county of Oxfordshire. (Morozov, 2011, p.15)

Here the fluidity of identities on Twitter that is used to confuse Iranian authorities, who are presumably looking for dissenters on social media, also makes it harder for more neutral onlookers to distinguish between people truly using Twitter to get information out of the country, and those pretending to do so to make it possible for them to continue sharing news. How accurate that impression was is perhaps beside the point; what matters here is that Twitter’s potential of virality and veneer of assumed authenticity lend a certain credence to anything said by someone with an Iranian-sounding name, an Iranian-looking photo and a message with a spirit of defiance against an oppressive regime. The question is then whether having so many Spartaci does not muddy the waters enough that it is to most people impossible to know who or what to believe; and in spite of any ‘authentic’ voices reporting on the events, clearly people are still drawn to more established sources of information, i.e. journalists, even if these journalists are reporting from a faraway country.

The same mechanisms that made it worthwhile for 4chan to set up misinformation operations thus also underlie the impact of social media in the case of, for example, the Arab Spring; a highly anonymous platform that does not encourage checking one’s credentials, and on which it is thus easy to create the *impression* of some sort of momentum. This is not to say that those who posted on Twitter to spread news about what was going on in Iran were not genuinely involved with what was going on there; in many cases they were, and these conflicts always offer examples of genuine, impactful news that only gets out because someone in the midst of the chaos posts about it on a platform like Twitter. Studies have shown that during that other ‘Twitter revolution’, the Arab Spring, Twitter usage originating in Tunisia and talking about topics such as liberty, revolution and economy peaked (Howard, et al., 2011, p.12); tweets with footage from Cairo’s Tahrir Square have been immortalised in books and
thousands of news articles; and more recently, people trapped in cities in the midst of the Syrian civil war have used Twitter and other social networks to report on the events there, whereas traditional media have very few journalists able to do so due to the danger\textsuperscript{50}.

Either way, people consciously and unconsciously make use of Twitter’s affordances to influence and affect the debate; both the debate as ongoing on Twitter itself, and a wider debate in which multiple ‘camps’—which may or may not consist of the people they pretend to represent—engage in heated exchanges where victory is sometimes measured in attention; in reaching the ‘trending topics’ list, or in convincing a critical mass of people to start tweeting about a particular topic. And attention does in many cases bring something tangible, as evidenced by how willing other media are to report on what happens on Twitter; it can act as a megaphone, an amplifier for a cause, based on the premise that if something is trending on Twitter, it is apparently worth talking about. It is therefore not surprising that when the topic \textit{du jour} is a politically charged issue, Twitter has been blocked or censored by authoritarian regimes, or surveilled for subversive activity, as was the case during the Green Revolution in Iran (Morozov, 2011, p.157).

Even when IRC was as prominent as Twitter is today, at least as a platform to report and combine the very latest news about ongoing events on, it was never as much of a target for authorities; during the Soviet coup in 1991, when coup forces controlled all state media, there does not seem to have been any attempt to block access to IRC. Censorship was far less of a factor in general during IRC’s heyday in the early nineties, because it is more difficult to censor a platform that can be spread over so many different connections and site, but perhaps also because the internet was far more obscure then. However, some exchanges in Ibiblio’s chat logs show that it was at least

\textsuperscript{50} The Syrian civil war has also brought forth some of the more complicated examples of such ‘amateur’ social media-based reporting; such as Bana al-Abed, a seven-year-old girl that seemed to be tweeting about the dangers of war around her, while in fact her mother was tweeting in her name; ‘Amina Abdallah Arraf’, owner of a blog titled ‘Gay Girl in Damascus’, which turned out to be the \textit{nom de guerre} of Tom McMaster, an American who was not gay, a girl or in Damascus; and numerous photos and videos claimed to be showing the Syrian conflicts but actually originating in other contemporary or earlier conflicts. Other authors have offered a more detailed analysis of such narratives, e.g. Bennett, et al., 2011 and Smith, 2016.
considered a possibility by those using the platform, such as in the following line from the chat logs covering the USSR coup in 1991:

"<J.> A few minutes ago all israeli IRC suddenly stopped. Normal Internet connections to israel are still functioning correctly. This might very well be the end of israeli IRC"

It is not clear that this warning was based on anything substantial, and other sources fail to confirm a shutdown of “Israeli IRC”; though in the same chat log, the following network-wide call for help can be found:

"hello. In order to keep irc in Israel, we need everyone who cares to give a short comment about it's educational benefits, or one self-experience examples. write to: [irc]@bimacs.cs.biu.ac.il (please help)"

Based on the emphasis on IRC’s “educational benefits” and the e-mail address, which points to the computer science department of the Bar-Ilan University in Ramat Gan, the problem here is perhaps not so much censorship as a systems administrator annoyed at the traffic IRC is bringing to their network; university networks in those days were often important internet hubs that had to balance scientific needs with more recreational uses of the available bandwidth. Recall the similar issues Hank Nussbacher had with BITNET Relay Chat’s popularity and the ultimatum he issued when it became too much of a resource hog, described in chapter five, which could well have elicited responses like those quoted above.

Perhaps this was, like the portrayal of IRC as breaking a “media blackout”, simply an exaggeration of how important or subversive the platform really was in this early example of online citizen journalism. IRC has indeed been noted as an avenue for “Indymedia journalism” (Platon and Deuze, 2013, p.384) or as a place for journalists to find sources and share information (Miller, 1997, p.86) or interview people (Verwey, 2001, p.115). But the buzz around IRC as such a sustainable platform for journalism is somewhat dampened by the small scale the examples that still remain show (for example, the Gulf War chat log cited above comprises 39 files with the largest of these
only containing 1092 lines of chat, which is relatively little considering the real-time nature of IRC chat). I discuss this ‘imaginary’ of IRC in more detail in chapter 8.

However, IRC did offer a new mode of disseminating and discussing news in real-time, involving not just remediations of mainstream media sources but in some cases also those directly involved with or affected by the events. It is in some aspects very reminiscent of the role Twitter would play in later political conflicts; though the focus here is more on aggregating ‘mainstream’ news sources and less on broadcasting the voice of bystanders. Twitter would later offer a platform with a reach and ease of use that IRC could not hope to match; though its function as a forum for real-time discussion and speculation survives, not coincidentally being quite similar to how IRC is used as a tool for coordination of trolling while the actual trolling has moved to Twitter for much the same reason; anonymity, access and visibility. The more benign value of these platforms in this respect is then very much in offering an aggregate of many disparate news sources; even if the authenticity of individual sources cannot be verified, together they paint a picture that is eagerly consumed and disseminated further, occupying a niche in news reporting that is not covered by more traditional forms of journalism.

6.3. Visibility and affordance-awareness as factors

IRC and Twitter are both useful tools when reporting on developing events and can offer an alternative or supplement to more traditional forms of reporting. Both afford live posting of small bits of information that can then be fit into a larger narrative that is constructed and reconstructed as new information comes in. Sometimes with unfortunate results, such as when enthusiastic self-fashioned amateur journalists identify the wrong person as the likely Boston bomber. In Twitter’s case, the immense potential audience of any tweet and the centralised nature of the platform adds another dimension to this, in how it affords ‘gaming the system’ through astroturfing and thus has the power to affect political discourse; this effect can range from more jocular pranks like #EndFathersDay to concerted attempts to distort a public debate and harass those involved, such as in the case of GamerGate.
While it is used for the same purposes, IRC is a less effective platform for both ‘citizen journalism’ and harassment for multiple reasons, particularly because the audience of anything shared on it is by necessity limited to the channel in which it is said, rather than the full audience of Twitter as is the case for any tweet. While harassment is hardly unheard of on the platform, the most prominent examples of it are cruder than the coordinated campaigns perpetrated by communities such as those found on 4chan, mostly being limited to targeting specific channels because of their theme rather than trying to influence a wider debate. The ‘micro-platforms’ that make up IRC are however very suitable for coordinating the type of concerted trolling that Twitter is used for; in this way the platforms both have a role in this type of discourse.

Looking at citizen journalism, visibility is again key. Both Twitter and IRC are used for citizen journalism; but whereas on Twitter it is difficult to gauge the trustworthiness of something and filter the wheat from the chaff, as content is not meaningfully organised, on IRC such content will be concentrated in one or a few specific channels, which in turn can be moderated strictly to maintain the level of conversation. This does not in itself ensure the veracity of what is discussed in the channel—as became clear when IRC discussions played a role in misidentifying the perpetrators of the Boston Marathon bombing, and can also been in speculative exchanges about the Soviet coup and Gulf War in archived chat logs. At the same time, the direct audience for any citizen journalism on IRC is also limited; while its coverage of various early-1990s political conflicts would go on to be acknowledged in news coverage and descriptions of the platform, the number of people who were on the platform and able to read the ongoing discussion was relatively small. On Twitter, conversely, anything has a direct potential audience of millions if it manages to get retweeted or linked often enough, though this is independent of the reliability of the content that goes viral, as the messy role of Twitter in the Green Revolution illustrates.

In both cases—citizen journalism and political trolling—IRC’s configuration makes it suitable for coordination and a discussion that is at least somewhat free of those seeking to derail the conversation, while due to Twitter’s larger and flatly-organised audience content, that platform has the potential to reach more people at the cost of being at a higher risk of ‘contamination’ by consciously or unconsciously misleading authors. And, importantly, in various cases people display a high degree of awareness
of these strengths and weaknesses, and the affordances that constitute them; explicitly referring to how to appropriate these for their own objectives, as seen with 4chan’s Twitter ‘operations’, or pre-emptively setting rules to prevent their abuse and creating ‘micro-platforms’, as in the case of the tightly-moderated IRC channels reporting on current events.

The implications here are twofold. For one, affordances are indeed ‘nudges’ that promote certain types of use, but people have an active role here, and appropriate affordances as tools to use to their own ends—sometimes with results that the platform then seeks to address or inhibit, at other times finding new types of expression that are celebrated. Additionally, IRC’s channel-based structure affords more social control, which inhibits some excesses of behaviour that find their way to Twitter and thrive due to the flat organization of that platform, which promotes viral spread of all kinds of content, both benign and malicious. In the following chapter, I explore this notion further, examining the differences between Twitter and IRC when it comes to social structures, performativity, social connections and community-forming.
7. Performativity, community, comedy

The internet has since its early days been lauded as a place for meeting new people and sharing experiences. As early as the 1980s and 1990s, authors like Julian Dibbell, Sherry Turkle and, in a more political context, Hakim Bey have described the possibilities the internet offers for creating communities through rich, affective conversation, and bringing like-minded individuals together. And both IRC and Twitter offer plenty of features that can potentially fulfil these promises. A cursory look at both platforms’ histories would suggest that indeed they are both cradles of communities, genres and even movements: think of the Black Lives Matter movement that originated in a Twitter hashtag, the many vibrant chat channels on IRC and the ad-hoc commentary on news events that both platforms often provide.

In this chapter I will explore how exactly Twitter and IRC afford these various types of rich affective communication. The previous chapter dealt with both platforms’ coverage of news events and the dynamics of such debates in relation to the platforms’ respective affordances. This chapter shifts its focus to the more performative and affective aspects of these affordances. As danah boyd put it when discussing online comments, “[those] are not simply a dialogue between two interlocutors, but a performance of social connection before a broader audience” (2011, p.45). Online conversation then are a performance in the Goffman-esque sense, “[an] activity of a given participant on a given occasion which serves to influence in any way any of the other participants.” (Goffman, 1959, p.8). Like Goffman, I am mindful here of the theatrical nature of such a performance; while people are “typically unaware of how routine [their] performance really is” (ibid., p.31) in other instances they may play up this performative aspect of social interaction, which provides illuminating examples of how much space a platform like Twitter or IRC gives people to (un)consciously shape ones’ performance to their liking. Elizabeth Burns’ Theatricality (1972) was perhaps the first major work to focus on this more explicitly performative aspect of social interaction, where a conversational role is assumed or emphasized for “rhetorical” effect (p.33); I discuss a number of examples on Twitter and IRC where this mode of performance is foregrounded.
Both platforms can furthermore, and perhaps as an extension of their performative affordances, facilitate (virtual) communities; what Howard Rheingold, in *The Virtual Community*, called the “agorae of modern life” and “[tools] for conviviality” (1993, pp.9-11), the modern-day ‘third places’, following Ray Oldenburger. But as I will discuss here there are important differences between platforms in the type of community that is afforded, and the extent to which typical conversations are affective or emotionally rich. As in the previous chapter, I will use key examples of communities and affective speech to explore which affordances are at play here and how they relate to each other, the design of the platforms, the people using them and the dynamics between these factors as similarly explored in previous chapters.

I will slowly make my way from the general—IRC’s and Twitter’s performative affordances—to the more specific—how both platforms afford the formation of communities—to finally take a look at how well a particular popular genre of expression (comedy) works on both platforms. The goal here is not to create an exhaustive typology of, for example, IRC’s performative features or all genres of expression that can be found on Twitter. Such an exhaustive typology would in the end be a typology of human expression: something that is beyond the scope of this thesis and, probably, impossible. Rather, by analysing a number of examples of performativity, community formation, and comedy, I will chart the process through which the platforms’ configuration affords certain type of social and affective activities well, and others less so. The goal here is to make explicit the dynamic between a platform’s design and what people do with it: how can we use IRC’s design to explain why it is such fertile ground for communities, and what in Twitter’s DNA explains the important role comedy plays on the platform? And what does this mean for our understanding of these platforms, and of social media affordances in general?

7.1. Affectivity on IRC: From flirting to marriage

As far as affective conversation is concerned, it is safe to say that IRC is a pioneering platform. One use of IRC that keeps popping up in works about the platform from the 1990s is romance and sex. In earlier chapters the channels #gayteen and #gaysex were discussed, channels that were pivotal in the developments of IRC bots but also
exemplary of part of IRC’s early audience; IRC and other relatively anonymous internet platforms were early-90s safe havens for LGBT people. But IRC was not just a safe space for sexual minorities—online flirting, dating and sometimes even marriage was commonplace, and conversation could quickly reach depths that could require an extensive ritual of trust-building in an offline context:

Electronic communication requires a distinct conversational technique. Conversations are completely different from spoken exchanges. It is almost as if there is no time to lose. Juliette from Karlsruhe, for example, proceeds to pour her heart out in no time after joining the #love channel51. (Van Jole, 1994)

This was in part made easier through some of IRC’s features, which were explicitly performative and allowed the conversation to go beyond mere lines of chat text. As Dutch technology journalist Francisco van Jole put it in his 1994 book De Internet-sensatie (The Internet Sensation), describing his experiences with internet flings ‘Susan’ and ‘Juliette’:

The use of IRC has a completely unique sensation. The idea of joining each other in the same activity, thousands of kilometres away from each other, creates a special bond. […] It is not only possible to ‘say’ things but also to ‘do’ them. The user can, like in a novel, transform themselves into the third person singular. […] When I type ‘/me touches the screen’ it appears on the system as ‘Francisco touches the screen.’ Which is obviously different from […] the following appearing on Susan’s screen: ‘*Francisco* I’m touching the screen’52.

(ibid.)

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51 Transl. from Dutch: “Elektronisch communiceren vereist een aparte gesprekstechniek. De gesprekken lopen totaal anders dan gesproken conversaties. Het lijkt wel alsof er geen tijd te verliezen is. Juliette uit Karlsruhe bijvoorbeeld stort binnen de kortste keren haar hart uit op het #love-kanaal.”

In the modern environment of hyper-mediated social networks with video, photos and emoji this feature, which is just another way of sending plain text chat, may not seem very impressive. Van Jole’s book is something of an ode to the early internet, and he has the tendency to wax lyrical—but it certainly is true that in 1994 such ‘multimedia’ offerings were scarce, and IRC’s ‘/me’ command offered a powerful performative bonus to the text-based systems at the core of virtually every social platform at the time. It should be noted that ‘/me’ was not a radically new invention, and there were other platforms that offered a far more comprehensive set of tools for role playing, such as MUDs, on which role-playing was one of the main purposes of the platform. IRC itself also had another command that allowed sending messages in a different format than the ordinary conversation had: /away, which allowed people to set an ‘away message’ that could be retrieved by others while they were not present at their computer. The important difference here between IRC and MUDs was that MUDs and similar platforms were explicitly created as platforms for gaming and fantasy role-playing; IRC was a far more general-purpose type of platform, and while role-playing was certainly possible, it had never been a goal of the platform; not when Jarkko Oikarinen first created it in 1989, nor later when more people were involved with its development.

In fact, there is a case to be made that despite Twitter’s many multimedia features, IRC still affords performativity and affective conversation better than Twitter (and by extension, other contemporary social networks). One reason for this is the existence of commands such as ‘/me’, which though simple added a new dimension to more intense conversations such as van Jole’s flirting with Susan, and thus allows for richer conversations in a way that a platform like Twitter, which has no such different modes of conversation, does not. But another part of it is the way in which IRC offers a compartmentalised experience coupled with a fluid identity. What happens in one chat channel in principle stays in that chat channel; contrast this with Twitter, where anything said is visible to anyone, and easy to link to everything else tweeted with the same account. While there is nothing that prevents people from flirting with each other on Twitter, there are more obstacles that would make it less attractive to do so: everyone can see you flirt, and in case of a rejection at least one half of the conversation is not within your power to delete. Comparatively speaking, on IRC a
conversation is at most recorded in one’s own private log files, and nicknames are virtually free—it is easy to be anonymous and embarrassment is cheaper as well.

But while flirting and romantic conversations were certainly popular on IRC, and the `/me` command offered an expressive way to make such conversations more performative, not all conversations were so hot-blooded. IRC’s MUD-like performative and real-time chat, combined with the lack of MUDs’ rigid theming, made for a platform characterized by a peculiar mix of anonymity and intimacy where almost anything could be discussed. Just as Usenet had groups about virtually any topic, IRC had channels about all sorts of subjects; not only sex and flirting, but also more mundane subjects such as software development, music genres, or certain geographic areas. Very little personal information was linked to people’s nicknames, and thus there was little risk of what Daniel Trottier calls ‘digital stigma’ (2014, p.2). This is the potential consequence of discussing intimate matters online, which on IRC is present but less in international, theme-based channels than in the geographically themed rooms, as in the latter there was always a risk of recognition based on the personal experiences someone shared. In the case of romantically or sexually-themed chats, the plain text chat combined with the performative `/me` command were enough for people to engage in elaborate, stimulating exchanges:

I touch her skin. She strokes my hair [...]. The digital undressing has begun. [...] Of course it is just fantasy, but so is a film or a book and no one will argue that such fictions are unable to arouse physical responses. (Van Jole, 1994)

In other cases, this ‘performative’ aspect of IRC can be taken rather literally, as in the case of ‘The Hamnet Players’, a virtual theatre troupe that performed mostly

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53 Flirting was popular enough that it was seen as problematic by some, especially because there were far more men than women on IRC, and women would be ceaselessly propositioned; this is illustrated by various satirical guides that appeared online in the 1990s, making light of the blunt and tactless way many men sought to initiate cybersex with women on IRC; see e.g. Framstag’s Chatting All Over The World (1992), SalvDali and Catra’s IRC-er’s Guide to Net-Sex (1994) or Maelstrom’s How to Meet Women on IRC (1998).

54 Transl. from Dutch: “Ik streel haar huid. Zij woelt door mijn haar [...]. Het digitale uitkleden is begonnen. [...] Natuurlijk is en blijft het allemaal maar fantasie, maar dat is een film of boek ook en niemand zal durven beweren dat dergelijke verzinsels niet in staat zijn om lichamelijke reacties op te roepen.”
Shakespeare-inspired plays in IRC channels (see also Danet et al., 1995). This was an inventive use of the platform that made full use of features such as the ‘/me’ command and re-appropriated other features, such as kicking people from a channel to simulate their characters exiting the stage, and changing nicknames to signify significant changes to the character’s status:

«The_King»AAAAARRRRRgggGGGhhhhHHHHHH!!!!!! That fucking hurts ya bastard! [66]
«Crow»<Continuity - the KING killed the queen>
* The_King dies, horribly [67]
*** The_King has been kicked off channel #hamnet by Hamlet (Hamlet)
*** The_King (@m10.herts.ac.uk) has joined channel #hamnet
*** The_King is now known as exKing

This sometimes clashed with the realities of IRC and the early-90’s internet in an amusing way, such as when the producers’ internet was cut off due to a thunderstorm, or when “a ‘bot’ […] accidentally killed Hamlet halfway through the production.” (Bird n.d.) On Twitter, which has also been used as an experimental stage for theatrical performances, such issues are obviously less prevalent. In the case of Twitter, plays and theatrical performances were transplanted by breaking them up in Tweets and tweeting them in sequence. The practice was dubbed ‘Twitter Plays’ by theatre scholar John Muse, who saw it as an indicator that indeed, Twitter too was a very performant platform:

[Twitter theatre] offers a particularly rich instance of the ways social media are reshaping both playwriting and the experience of theatrical spectatorship. To examine the ways artists are enlisting Twitter for theatrical ends reveals […] the extent to which social media are making playwrights, performers, and spectators of us all.
(Muse, 2012, p.43)

Muse cites a number of examples of such ‘Twitter theatre’, such as the following excerpt from a performance of Next to Normal, a musical of which an adaptation was performed on Twitter as part of a promotional campaign for the show’s Broadway run:
However, comparing the Hamnet performances with ‘Twitter plays’ like Next to Normal and other examples Muse cites, it is clear that the Twitter performances are far more static and less spontaneously performative than IRC’s. Many ‘plays’ are simple line line-for-line recitations of existing scripts, though some provide a more medium-friendly adaptation similar to how Hamnet adopts IRC conversations, by using hashtag and @mentions or adapting the script for the medium. But whereas on Twitter such theatre productions never really transcend the act of revealing a script line by line, IRC plays can appropriate kicks, bans, topics, changing nicknames and actions for dramatic effect. Furthermore, it is far clearer who is involved in the play, and it is also far easier to follow, as instead of a loosely-linked series of tweets an IRC conversation (theatrical or not) is unambiguously chronological, contained within a channel and limited to a well-defined set of participants and observers. This is a powerful example of Twitter’s more general problem of the fundamental incompatibility of conversations with its timeline (as discussed in chapters four and six), which is especially pronounced when conversations are used in a particularly esoteric way, as happens in this case. On IRC, conversations, even when appropriated for theatre performances, are far closer to the platform’s original purpose and thus there is less tension between the genre of ‘IRC plays’ and IRC as it is generally originally
used; indicating that IRC affords a wide range of performative discourse, more so than Twitter.

And on IRC, sometimes this overtly and literally theatrical way of using online chat intersected with its function as a catalyst for flirting and romance, and “IRC weddings” were held in celebration of relationships. Online weddings are a surprisingly persistent phenomenon, and while weddings on platforms like IRC and the similar ICB55 may have been the earliest examples of the practice, weddings are still relatively common within parts of, for example, *World of Warcraft* communities56. In general, such weddings are often close simulations of traditional ‘offline’ weddings. The following is an excerpt from *icb-wedding*, a transcript of a ‘wedding ceremony’ on ICB in 1991, showing how such ceremonies are both reminiscent of *Hamnet* and prominent examples of the performative aspect more intimate chat conversations could have:

<H.> *takes ring out of case and places on her left hand*
<N.> *picks up ring and puts it on his right ring finger*
<R.> Now, if anyone here in this company can show just cause why these two should not lawfully be wedded together, let him or her speak now or forever hold his or her peace.
<R.> Not hearing any objections . . .
<R.> Mark and Nora, please join hands.... Never mind.57

Unlike in the case of theatrical performances, the practice of staging weddings online has not crossed over to Twitter; there is of course a clash between the intimate, ceremonial, controlled environment of a wedding and Twitter’s public, informal and moderation-free platform that makes the latter far less suitable for a virtual version of

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55 ICB (called ForumNet in earlier versions) was a parallel development to IRC, another offshoot of BITNET Relay Chat with some technical differences but very similar in its user-facing affordances. It was smaller than IRC and eventually disappeared in favour of its ‘big brother’, but it was similar enough to it that examples from its chat logs are useful here. Academic writing about ICB and ForumNet is sparse: one of the only studies describing it in detail is Kenneth Simon’s *A Study of Computer-Mediated Social Life* (1991).

56 See e.g. Cherie J. Todd’s *Sex and gender in World of Warcraft* for a more detailed account of weddings in that game.

57 This chat log has been reformatted for clarity.
these than IRC. In general, due to such differences Twitter is far less appropriate as a platform for role-playing than IRC and its ilk.

7.1.1. When is a platform affective enough? Between MUDs and IRC

But while role-playing—in both the theatrical and MUD-like senses of the word—did have a place on IRC in instances such as those shown above, these modes of conversation were never as important as they were on more dedicated platforms such as MUDs, and were mostly reserved for special occasions such as IRC theatre and role-play weddings. Generally, people kept themselves to casual conversation, with performative features used to substitute non-verbal components of offline conversation (a topic that I will explore in more detail later in this chapter). And in the case of both IRC and Twitter plays, these are obviously outliers—the typical IRC or Twitter conversation is far less dramatic and in most cases will have less obviously theatrical characteristics. But such extreme examples reveal the performative limits of the platform—the potential it has for people to not only talk to others but also convey their feelings through affective speech. Indeed, theatrical similes abound in Goffman's seminal work on performativity and identity; and when viewing the presentation of self as an essentially performative act, as he does, the range of performative affordances a platform in effect becomes the range of affordances it has for the presentation of self.

However, while the rich interaction of plays, weddings and flirting, and the modes of conversation they afford by extension, in hindsight appear to be one of the strong points and an important ‘selling point’ of IRC, not everyone was so enthusiastic when features like /me were first introduced. As seen in chapter six, IRC’s development has always been a public affair, discussed widely on mailing lists and in newsgroups and built around a mix of motivated developers and a consensus-seeking community. Reading archives of the operlist reveals that features like /me and the /away command were implemented with relatively little input from the people that would be using it: most feedback is dated after the new version containing them had been released. And the similarity of /me to MUDs’ role-playing commands was not lost on the IRC community: as one correspondent said on the operlist in 1991, “This is a Bad Thing (TM). IRC is not a MUD. People who want MUDs can use MUDs, and stay off IRC.
People who want conversations can use IRC, and forget MUDs.” Other people also appreciated IRC’s lack of role-playing hassle in favour of a more focused chat experience, or as a poster in alt.irc put it, “IRC is a to MUDding what crack is to cocaine. IRC takes out all that useless fighting and wandering around and leaves a concentrated social session.”

Clearly from this point of view, simple plain text itself was performative enough, and anything on top of that could be expected to degrade the conversation into an exchange of canned commands instead of free-form text:

Software support for 'actions' and 'feelings' will have a bad effect, that I'm already beginning to see. I've seen some very good teleconference BBSes reduced to total mindlessness by software-supported actions, and I don't want to see the same thing happen to IRC. Please, please, please, DON'T DO THIS!!!!!!!!!!!!!!

In hindsight, it is clear that these fears were mostly unfounded—IRC persisted for years after the implementation of the feature, and by all accounts remained a place of lively conversation, now enhanced by things such as the Shakespeare-inspired performances that the new commands afforded. But it is noteworthy that there was, at least amongst some of those using IRC in the early days, a conviction that IRC should not become too performative; that it should be text-based conversation, and nothing else, lest it became yet another role-playing platform on which pretending to be a wizard or orc would get in the way of having a ‘real’ social conversation. In itself this is not an unreasonable fear, as the addition of /me implies that role-playing features were appreciated to some extent, and the question is why IRC did in fact not become a MUD-like platform and did not continue adding performative commands. Instead, it largely ceased doing so after /me and /away were implemented. As seen, there are many examples of how effective these were in affording new modes of conversation, especially /me; why not add other commands to, for example, make it clear to others what your gender is, or your age—common features of MUDs?

Such commands were indeed proposed via for example the alt.irc news group on Usenet and the various mailing lists concerning IRC, and undoubtedly as well on various IRC channels of which no logs are available. But these were rarely adopted and
in many cases discussion about them failed to reach a consensus that would have led to an implementation of the feature everyone would have been happy with. A proposal for a way to specify one’s gender in the alt.irc Usenet group never got anywhere when people kept disagreeing about whether or not something like that would turn IRC into a dating platform, and whether that was desirable (McLaren, 1992). Others were concerned that this feature would be too MUD-like (Adams, 1992). And clearly none of the developers felt compelled to unilaterally implement such a feature, even if there was some demand for it. Similarly, a proposal for an “IRC graphics protocol” that would have allowed people to send graphical emoticons to each other in a standardised way never got enough traction to become a part of the standard.

Perhaps the feeling that IRC should not become another MUD was shared more widely, and /me was deemed to be sufficiently versatile that no other performative commands were needed. Indeed, people published extensions for IRC clients that utilized /me to emulate well-established and more specific MUD commands, like /cough which would generate something like *stijn coughs noisily. And people had ways to send emotive messages even before commands with that purpose were added; through smileys or conventions such as <stijn> *writes thesis*. Elizabeth Reid, in her 1991 thesis on IRC, ‘Electropolis’, provides a list of popular examples of these “strings of highly emotively charged keyboard art”; and the importance of such textual descriptors was also something the developers of IRC themselves were aware of. Replying to complaints about the /me command, one pointed out that there had always been textual conventions people used to convey emotive content, and /me was “just a way of formalizing that for IRC” as one user described it; and apparently, /me on its own was versatile enough to address the bulk of desires people had on this front.

Existing performative conventions, and smileys, are not so much part of IRC as a jargon-like set of customs that developed in reaction to the early internet’s distinct lack of multimedia communication; virtually all messaging software was text-based, colour displays were relatively rare and modern modes of communication such as video calling were impossible with the technology of the time. Smileys and other emotive short-hands were developed relatively quickly after the internet was
invented, and many are described in the *Jargon File* with examples dating back as early at 1982\(^{58}\). These naturally carried over to IRC, just as /me had more or less immigrated from MUDs. And in any case, the ability to easily create bots for IRC had the potential to compensate for any perceived deficit in role-playing abilities, as evidenced by the ‘gm’ bot that facilitated role-playing sessions as early as 1991. It is impossible to say why exactly IRC never continued towards a MUD-like set of performative features, but it is likely that a combination of smileys, bots, and existing emotive jargon afforded sufficiently rich conversations—together with IRC-specific features like /me—that there was an implicit perception that no further extension of this functionality was needed—and in some cases, that further extension would in fact be detrimental to the platform. And for those who desired a platform with more specific performative features, MUDs were always available as an alternative that contained a more feature-rich role-playing experience.

### 7.2. From affect to community: cultivating personal bonds

Smileys and other examples of emotive jargon have now partially been supplanted by inventions such as emoji, and the ability to embed video and photos in messages on virtually any modern platform. But while such functionality affords some things that were never possible on IRC, seen in its temporal context IRC had a well-developed set of affordances for expressive speech in spite of the many technological limitations platforms at the time faced. And combined with the anonymous nature of the platform, the wide variety of thematic channels, and the group-based social structure channels brought with them, this made for a platform highly conductive to forming new communities.

Communities are possible on any platform—but on Twitter and many other contemporary online social platforms, communities are almost always based on pre-

\(^{58}\) The invention of the smiley is very reminiscent of the invention of the hashtag described in chapter 3: computer scientist Scott Fahlman simply proposed to start using it as a “joke marker” in a BBS message, and it quickly grew in popularity as people liked the proposal and started using the “:-)” smiley more and more often (Fahlman, 1982).
existing social ties. IRC made it easy to find new people, and relatively low-risk and low-effort to ‘try out’ a channel and see whether there was a mutual attraction—while at the same times conversations could go quite deep and convey a wide range of emotions.

Given the propensity of conversation on IRC to gravitate toward affective, emotionally rich speech sooner or later, it is not unreasonable to say that the platform was conductive to the formation of communities. As seen, people come back to a certain channel and repeatedly talk to the same people, in conversations that transcend the mundane and reach notable emotional depths such as depression or love. This may not seem very remarkable; on virtually all online platforms, people can and will group together and share content between each other. But to speak of community is to speak of a transcendent social structure that is both noticed and appreciated by those participating in it—an emergent phenomenon more durable than mere conversation. Yet as Liu (1999) argued, “a [Computer-Mediated Communication] environment that has the potential to nurture the development of a virtual community is fundamentally different from taking any group CMC as evidence of community” (p.3). The question then is whether in the case of Twitter and IRC we are indeed looking at environments with such potential, or platforms that are merely limited to “group CMC”: group-based communication that may have superficial similarities with community-based communication but never reaches that level of sustainable rich interaction. Do the platforms cross the line between “group CMC” and “developing a virtual community”, and if so, are there differences in how they do it?

There is an important difference between IRC and web-based platforms like Twitter here. When someone is “on Twitter”, that generally means they have an account on the platform, and regularly check for updates or post to it. While the phrase ‘on IRC’ can be used in the same way, it also indicates that someone is actively connected to an IRC network; they have started their IRC client, connected to the internet and are actively or semi-actively participating in conversations. Once they disconnect—by closing their client, or shutting down their computer—they have no way to follow the conversation and will not be able to see what is being said in their absence. On Twitter there is no need to be actively connected to the platform to receive updates—they can be fetched and read at one’s own convenience.
This of course reflects the availability of internet connections when the platforms were created: when IRC was developed, people connected to the internet via dial-up or a shared computer, and as both bandwidth and disk space were relatively scarce on computers of the time it was not feasible to save messages on the server so a backlog could be sent to someone when they logged back on. Thus, on IRC, there was very much a sense of actually having a real-time conversation with people; everyone in a channel could reasonably be assumed to be reading what was being said. And in case one was connected but temporarily not participating, they could use the '/away' command to mark themselves as inactive to others in the same channels as them and leave a message explaining their absence. Compared to Twitter, this affords far more active, focused and inclusive conversations; Twitter allows people to have ‘conversations’ too, via Tweets, but there is no indication of whether someone is online when sending them a tweet, and no easy way to see who is reading what is being said, in addition to the problems with displaying such conversation threads that were identified in chapter four.

In ‘Electropolis’, Elizabeth Reid argues that on IRC, these characteristics of the conversation, in addition to commands such as ‘/me’ and certain emotive phrases, take up the important role non-verbal communication has in other contexts for “regulati[ing], modify[ing] and control[ing] communication”. She also points at smileys—then still a relative novelty—as a way IRC chat could be rich in content in spite of its text-based nature. In combination with the fast pace at which IRC exchanges can go, this promotes intimate interaction that can quickly become more intimate than even face-to-face conversations:

Speed of response and wit are the stuff of popularity and community on IRC. The Internet relays chat, and such social endeavour demands speed of thought - witty replies and keyboard savoir faire blend into a stream-of-consciousness interaction that valorises shortness of response time, ingenuity and ingenuousness in the presentation of statements. The person who cannot fulfil these requirements - who is a slow typist, who demands time to reflect before responding, will be disadvantaged. For those who can keep the pace, such 'stream-of-consciousness' communication encourages a degree of intimacy and
emotion that would be unusual between complete strangers in the 'real world'. The IRC community relies on this intimacy, on spur of the moment social overtures made to other users.

In this analysis, the quick pace of IRC conversations is key to its affordances for intimacy, maybe even more so than how rich the messages themselves can be. In this, IRC is clearly very different not only from Twitter but from most platforms referred to as ‘social media’; the quick, synchronous, real-time conversation type is not a part of platforms such as Instagram and Facebook and is rather found on chat platforms like Slack, WhatsApp, WeChat or Facebook Messenger. But on those platforms, crucially, people rarely talk to ‘complete strangers’ and generally do not utilize fluid identities. This is not just convention—in many cases the platforms require two people to have some form of existing relationship—even if it is only knowing each other’s’ phone numbers—to start a conversation. This is not the case on IRC, where channels can be joined at will and without prior knowledge, just like one may tune into a new and previously unheard radio channel by twisting the knob that adjusts the frequency. Channels and network addresses are liberally advertised elsewhere on the internet, and thus people can easily ‘hop’ from channel to channel to see whether one might tickle their fancy.

In this sense, and more generally speaking when considering communities, Twitter is a very different platform than IRC. IRC could, after a fashion, be said to have creating new communities as a core features, in the form of creating new channels; anyone can create one and moderate it as they wish. Communities can certainly exist on Twitter, depending on how the term is defined. But the platform does not explicitly support defining groups of people that can be seen as such a community; while people may congregate around a hashtag or Twitter account, these are implicit forms of grouping, and far more vaguely bound than the IRC’s channels. When Twitter itself speaks of ‘community’, it is to refer to Twitter as whole: the ‘Twitter community’ (see e.g. Geary, 2015). Academically speaking, various authors have discussed Twitter communities, such as Java et al. (2007, p.57; who define them as “a group of nodes more densely connected to each other than to nodes outside the group”) and Greene, et al. (2017; “a group of microblogging users who post content on a coherent topic”)—but these mostly discuss communities in a quantitative sense, e.g. a group of people on Twitter
more likely than average to be followers of each other—which in itself is no indication of shared experiences, emotional attachment or even knowing each other. Gruzd, et al. (2011) have considered whether Twitter can contain communities in more depth, and draw on the work of Benedict Anderson, Quentin Jones and Barry Wellman to arrive at a framework for analysis of Twitter communities. They position themselves within the frame of Anderson’s influential idea of the “imagined community” (1983); a grouping that is discursively constructed along, in Anderson’s case, collectively held ideas about nationhood and ethnicity. This line of thinking had been adopted in a general digital and CMC-based context earlier, by writers such as Mark Poster and, perhaps most prominently, Howard Rheingold in The Virtual Community (1993).

Gruzd, et al., for their part, identify the building blocks of imagined communities on Twitter mostly as affective factors such as “shared emotional connection”, “fulfilment of needs” but also, again, explicit relationships, i.e. following each other on the platform (p.1311). These all add up to a sense of community that, crucially, exists not as a tangible bond but as an imagined sense of togetherness; as in the case of imagined communities in general, they “require an act of imagination to use” (Smith, in Rheingold, 1993). It is worth noting that especially the more affective factors such as emotional support are also apparent on IRC (see e.g. Reid, 1991; Turkle, 1997; van Jole, 1994; Beaudouin and Velkovska, 1999), furthermore suggesting that Gruzd et al.’s framework generalizes beyond just Twitter.

Focusing on Twitter however, they argue that in some cases Twitter clearly has all aspects of a community, and the people on it communicate through affective messages (2011, p.1313). In this, it would be similar to the type of communication and community-forming that IRC affords. But they also note that in many cases, the people in the communities they studied had pre-existing relationships outside of Twitter, in the form of a shared workplace, earlier collaborations or friendship (ibid.). The focus of their study, and other similar analyses like Java, et al.’s, is Twitter and other modern online social platforms—comparisons with older platforms like IRC are not made. Therefore, it is useful here to take Reid’s 1991 analysis a bit further and discuss to what extent IRC affords communities, according to the frameworks used by Gruzd, et al.
Following Reid, there is a strong link between a platform’s capacity of conveying affective speech and its community-building affordances; this is also echoed by Gruzd, et al.’s analysis, as they repeatedly point out the value of “emotional support” and “supportive social relations” a community can offer. Thus, the extent to which these are afforded through the more performative aspects of IRC—the ‘/me’ command and other conventions that encode affect into plain text conversation—are especially relevant here. Reid’s analysis indicates that there is, indeed, a strong link between such conversational conventions and the emotionally supportive possibilities IRC offers; this is further supported by examples such as IRC weddings and Van Jole’s accounts of his online flirting, all of which make liberal use of IRC-specific affective features to offer varying degrees of ‘emotional support’ and rich social interaction.

This becomes all the more apparent when IRC is viewed through the lens of McMillan and Chavis (1986) ‘Sense of Community’ (SoC) model, discussed earlier in chapter 2 as a suitable way of framing communities in an online setting. Particularly as refined by Blanchard (2004), which is also used in Gruzd, et al.’s analysis of community on Twitter, this model serves as a useful analytical framework through which one may evaluate to what extent (imagined) communities are apparent on a platform. Following the SoC model, there are four characteristics that together indicate whether a sense of community is present: a feeling of belonging (“membership”), knowing that one can make a difference (“influence”), mutual support between members (“integration” and “fulfilment of needs”) and finally a shared history and set of experiences (“emotional connection”). These all fit particularly well with the affordances of an IRC channel: there is an explicit act of joining (or departing) a channel, marking the intention to acquire membership; one can make a difference by regularly contributing to an on-going conversation; the anonymous but expressive nature of text chat allows for emotional support, which simultaneously helps ‘making a difference’; and through contributing to a conversation for a period of time, a capital of shared emotions and experiences is created. Given this, IRC is very capable of creating a sense of community.

Gruzd, et al. argue that the same holds for Twitter, though obviously on Twitter the mechanisms of creating, for example, a shared history differ. But simultaneously, they note that in many cases, ‘membership’ often stems from existing connections, e.g.
friends and family. It is safe to assume that there is a sense of community with such friends outside of Twitter; this is often not the case on IRC, at least not initially when one first joins a channel. It can therefore be said that while both Twitter and IRC (and platforms with similar affordances) can potentially create a Sense of Community, this SoC is in most cases at least partially ‘imported’ on Twitter, while IRC has the potentially to create it out of nothing. This is perhaps the great difference here: given a communication tool people will find a way to be social, and both Twitter and IRC contain features that promote this and potentially reach a richness of communication that may foster a sense of community, but IRC is built so that they can also find new people to be social with.

This ability to not only foster but also create communities is something that comes up in much of the earlier literature about IRC and related platforms—MUDs have been an especially well-studied type of early online social platform. In work such as Sherry Turkle’s *Life on Screen* (1997) much is made of the value IRC and MUDs can have for those who have few social outlets in their offline lives, for example due to a non-accepting social context or lack of social skills. Other literature of the time often also focuses on IRC-like platforms as a space for escapism—a place to simultaneously ‘be yourself’ and ‘be what you want’ when neither is possible outside of these platforms. While this is certainly possible and Turkle cites multiple people for whom IRC and MUDs clearly are an escape (see e.g. ibid., p.223; ibid., p.230), other research from the same period has shown that those using IRC circa 1995 were generally well-adjusted people who did not use IRC as an escape but simply appreciated its sense of community and its capacity of providing a casual diversion from work or study. As Nicola Döring, who published a study of German internet users in 1995, concluded:

> The surveyed net users were in summary not especially isolated, nor lonelier than average. Years-long use of the net has also not lead to reduction or replacement of personal relations outside of the net. Not even the MUD players were especially lonely.\(^{59}\)

\(^{59}\) Transl. from German: “Die befragten Netznutzer waren im Durchschnitt weder besonders isoliert, noch ueberdurchschnittlich einsam. Auch mehrjaehrige Netznutzung hatte nicht zur Degeneration oder Substitution von personlichen Beziehungen ausserhalb des Netzes gefuehrt. Nicht einmal die Gruppe der MUD-Spieler war besonders einsamkeitsgefaehrdet.” (Döring, 1995)
So IRC was not popular because it gave people who had no social life away from the screen a way to be social—it was popular because it gave people a way to be social, period. This indicates that IRC communities are not a second-class alternative to ‘real’ offline socialization, but a genuinely enjoyable way of socializing regardless of how social you are outside of it.

While, as discussed, there has been some work on communities on Twitter, this tends to remain quantitative in nature and the groupings they detail rarely reach the same level of emotional support and sophisticated social affordances that earlier studies on IRC describe. The reason for this may be partially circumstantial: earlier internet studies, as a whole, tend to be infused with a strain of techno-utopian thinking that largely fell out of favour as the twenty-first century began. But even taking that into account, there is a striking difference, and more work on Twitter communities would be a welcome addition to the existing discourse.

7.3. LOL: Online platforms as a stage for comedy

As both Twitter and IRC afford affective interaction to an extent—if IRC perhaps more so than Twitter—it is useful to take a closer look at a particular type of such emotionally effective discourse: comedy. Comedy—performed humour—is perhaps a less obvious choice here than e.g. flirting or other romantic types of conversation which, as seen in the beginning of this chapter, can be quite powerful especially on IRC. But it is a genre of expression that is ubiquitous across platforms, more so than flirting which is generally speaking limited to more intimate settings such as that of IRC. Furthermore, comedy is “always a fait social” (Pfister, 2002, p.iv), being reliant on social and power relations; in an overview of different theories of humour and laughter, Stefan Horlacher further notes that despite their “mutual incompatibilities” (2009, p.22) many theories emphasize comedy as having a “bonding effect” and the potential to “establish rhetorical or discursive communities” (ibid., p.25), though the magnitude of this depends on the circumstances.
While comedy can and does have a community-supporting function, it may also be a form of content that is consumed rather than shared, especially with the context of a platform that is in some respects fundamentally ‘one-to-many’ like Twitter. But comedy also has a place and history on IRC, if in a different form, and a closer look at the various ways in which both platforms afford and convey comedic content is thus useful as part of a comparative analysis of the platforms’ expressive affordances.

On Twitter, a wider genre of ‘comedy twitter’ is distinguishable, a genre of tweets that varies wildly in its actual contents but has the shared characteristic that it is intended to evoke laughter (and perhaps likes and retweets, by extension). While there has been comparatively little attention for this specific genre in scholarly writing, it is prominent in popular writing, through listicles with names such as ‘25 Twitter Accounts to Make You Laugh’ or the popular curated ‘Twitter dumps’ of particularly funny tweets on other social platforms such as Imgur, an image-sharing site. Authors of comedic tweets often consciously curate and craft their Twitter profiles for comedic effect; these may be parody accounts (satirical takes on heads of state are a popular sub-genre) but personal accounts of stand-up comedians or actors are also often employed for this purpose. Some accounts may even be automated; while Twitter bots are not as versatile as their IRC equivalents, they can still be used to regularly post tweets with pre-defined content or as a reaction to other tweets.

Comedic tweets present an example of a genre of tweets that does not fit into a purpose-based typology that has been proposed by authors such as Stina Westman and Luanne Freund, who argue that tweets can be categorised into genres through factors such as purpose, timing and whether they contain hashtags and links (2010, p.324). The comedy value of tweets is as much in the tone and writing style of a tweet as in its actual content, and a tweet may be meant to be funny but at the same time serve as live commentary of an event or an update on the author’s personal life. Clearly genres can overlap; just as a film can be both a comedy and a tragedy, a tweet

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60 These range from Queen Elizabeth II (@Queen_UK) to Pope Francis (@PopeFrancisXXX), Donald Trump (@realDonaldTrump), Princess Beatrix of The Netherlands (@BeatrixPrinses), Robert Mugabe (@RG Mugabe) and many more. More esoteric varieties exist as well, such as “Deep Drumpf” (@DeepDrumpf), which automatically generates satirical Donald Trump tweets through an algorithm fed with Trump’s own tweets.

61 Perhaps the most prominent example of this is @horse_ebooks and its offshoots, which automatically post random excerpts from a variety of texts that – stripped of all their context – work as a sort of absurdist comedy.
may be a biting commentary on a political development that is at the same time hilarious\textsuperscript{62}.

The importance of writing style is highlighted by the rigidly nonchalant mark-up many Anglophone comedy accounts employ; a lack of proper punctuation and capitalization that is ostentatiously intended to evoke a humorously laconic impression. As an example, in 2016 comedy writer Olga Lexell deleted a tweet and subsequently reposted it with the subtle difference that the updated version did not use a capital letter to start her sentence, clearly indicating the significance of (avoiding) capitalization in her tweets. This echoes a wider convention used in comedy tweets; a disdain for proper capitalisation or spelling to convey a certain indifference—a “mixture of precision and nonchalance” (Seyler and Haggard, 2013, p.113) that is a characteristic of certain types of comedy both on and off Twitter (see also e.g. Levin 1987, 14). The writing style is prevalent enough that meme encyclopaedia KnowYourMeme has an entry for it, named ‘Weird Twitter’ and describing it as “a loosely connected group of Twitter users who are known to experiment with spelling, punctuation and format for humor or poetry” (amanda b. and Brad, 2012)\textsuperscript{63}.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure12.png}
\caption{Figure 12}
\end{figure}

A professed disregard for proper spelling rules is not unique to Twitter comedy; it is also a characteristic of, for example, 4chan’s /b/ image board and, as seen, a textual

\textsuperscript{62} Such accounts are often satirical; the popular ‘DPRK News Service’ (@DPRK_news) for example publishes made-up ‘North Korean’ news that is both over-the-top and implicitly critical of North Korea’s regime.

\textsuperscript{63} See Appendix A for a list of ‘weird Twitter’ user accounts that were consulted for this analysis.
manifestation of a classic comedy trope. But as a platform, Twitter makes it particularly obvious that it is a conscious style: when people’s timelines are filled with ironic tweet upon ironic tweet, all devoid of capital letters, a pattern is not difficult to distinguish. And as Twitter contains no facilities to edit posts, one may catch people in the act of correcting themselves accidentally breaking this pattern of pretend nonchalance, ironically emphasizing how important following a particular style of capitalization is to them. This is in part a self-reinforcing mechanism as this brand of comedy is evidently effective; John Hendren (@fart), one of the more prominent proponents of this style has over 123 thousand followers as of May 2017, and his tweets are routinely retweeted hundreds or thousands of times, ensuring they are generally seen by many people and making him something of a celebrity among certain audiences.

A related and noteworthy type of tweets is ‘ethnic twitter’, a label I use here as a catch-all for various tweets that are thought by others to signify the ethnic identity of the author through their style of writing or other characteristics. ‘Black twitter’ is one example of this type, and perhaps most famous or popular; it is certainly the one that has received the most scholarly attention (see e.g. Sharma, 2013 and Florini, 2014). It refers here not necessarily to black people posting on Twitter, as it does in Sharma and Florini’s work, but to tweets portraying a stereotypical African American vernacular, visual style and tone—the tweet’s writing style is the focus here, not its author. Particularly interesting is that tweets of this type may not necessarily be meant to be funny in themselves but are often grouped and disseminated by people who find comedic value in them nonetheless, via Twitter or on other online platforms such as Imgur and Reddit. A subreddit named ‘BlackPeopleTwitter’ has 860.000 subscribers and its members regularly post tweets or posts from other social media platforms that conform to black stereotypes or stereotypically use African American Vernacular English: whether the authors of these tweets are in fact black or just mimicking the style for comedic effect is in many cases impossible to verify. That such mimicky happens is likely: another subreddit, named ‘blacktwitter’ closed in 2015 with a farewell post conveying its administrator’s frustration with the practice, complaining that “I feel like you white frat boys think you can just come in here and keep pretending you’re black.”
The BlackPeopleTwitter subreddit lists other communities for collecting and curating these ‘ethnic twitters’ in its description: these range from ‘LatinoPeopleTwitter’ and ‘ScottishPeopleTwitter’ to more overtly comic variants such as ‘BikiniBottomTwitter’, after the town where cartoon character SpongeBob Squarepants lives. Clearly there is a genre of ethnically profiled tweets that is recognised as such by enthusiasts, and has even spawned subgenres and parodies. Not all these tweets are intended to be funny by their authors (though those parodying SpongeBob Squarepants in all likelihood are). Comedic intent is hard to verify, either way; and even if there is intent, one reader may find it funny because it confirms their ethnical stereotypes while the other appreciates it because of an inside joke it contains.

But at the same time, this highlights that metrics such as likes and retweets can have an effect on how people use a platform. Apparently, there is an audience for stereotypically African American tweets, and thus people appropriate this style and vernacular to become popular as well, even if it has very little to do with their own subculture or background.

Sub-genres such as ethnic and weird Twitter reveal that comedy on Twitter is complex and multifaceted: on the one hand there are the ‘Twitter comedians’, who intentionally post content that they hope will be found funny. On the other hand, there is content on Twitter that is not intended to be funny, but is perceived as such for example because of it exoticism, or because it confirms ethnic stereotypes. Complicating the picture, people may then intentionally start posting such stereotypical tweets that are at face value indistinguishable from the genuine variant and only differ in their intent. But in all cases, there is a clear incentive driving such content that is not unique to comedy and memes but especially powerful in their particular cases: the prospect of likes and retweets, which promotes content that people will find worth sharing or at least acknowledging.

The mimicry blacktwitter’s moderator was annoyed by is a logical outcome of this; when all tweets are visible to everyone, and comedy is as much in the writing style as in the (short) content, it is inevitable that tweets get taken out of context, especially if they are removed even further from it through retweets that make them show up on unrelated timelines and overview pages. The popularity of ‘style-based’ comedy on
Twitter can perhaps also be found in this mechanism—there is very little space to set up a detailed joke in 280 characters, but a writing style can be effective and recognizable even in a short message and is thus well-suited to the platform. Comedy, which has a long tradition of being adapted to short-form content, can be style-based to a large extent and is appreciated by many, is especially effective in that regard, and thus it is not surprising that it has established itself as a prominent genre on the platform.

7.3.1. Subgenres of comedy: memes

Twitter, then, affords both the creation and copying of comedy. A specific and especially successful form of disseminating online comedy is through memes. ‘Meme’ is a nebulous concept and what an internet meme is, precisely, is a matter of some debate: it has been variously described as “content or concepts that spread rapidly among Internet users” (Bauckhage, 2011, p.42); “a piece of culture, typically a joke, which gains influence through online transmission” (Davison, 2012, p.122); “units of popular culture that are circulated, imitated, and transformed by internet users, creating a shared cultural experience” (Shifman, cited in Milner, 2013) or “rapidly spreading, momentarily salient in-jokes” (Leavitt, 2014, p.137). What is common to most such definitions is that there is a (sub)cultural component to memes; that they are often comedic or ironic in nature; and that they are disseminated and spread, but also decay, relatively rapidly. The parallels with the wider genre of Twitter comedy are clear; viewing a tweet as a container, it is one in which a meme fits very well, given its built-in potential for viral popularity.

Twitter is thus not only fertile ground for comedy, but also for memes. In a study on hashtags on Twitter, Huang et al even identified a type of meme that is particular to Twitter, the micro-meme: “a small-scale meme emerging around a Twitter hashtag” (2010, 74). While one could object that hashtags are no longer unique to Twitter, and people could rally around other short-lived signifiers just as well, it is true that volatile, relatively small-scale memes are especially prevalent on the platform. Memes can quickly achieve large audiences if a comparatively smaller but active audience enthusiastically starts sharing it—in an analysis of this phenomenon, Alex Leavitt used the ‘Kony 2012’ meme as an example, arguing that “the initial success of the Kony 2012 meme was largely due to the circulation of the #kony2012 hashtag on Twitter.
from initial seed networks like high-school teenagers” (2014, p.139). This can again be attributed to the retweet feature, which can function as this “seed” even at small scales and make it easy for a tweet to reach millions of people even if its original author has very few followers. And if it is especially “meme-worthy”, people may copy or build on it, producing variations on the original and posting those to acquire a large number of likes and retweets via the same process.

Both Huang et al and Leavitt mostly limited themselves to tweets containing hashtags or @mentions in their analysis of the phenomenon, likely because such tags make it easy to group tweets for statistical analysis; more fuzzy signifiers are far harder to track at a large scale. But hashtags are not essential for Twitter memes; some may be image-based or snowclones64, and are thus harder to detect in aggregate as such patterns are less suitable for big data-like approaches due to their variety65. In general, broad studies of Twitter are mostly quantitative, inferring a wide range of characteristics from analyses of how often particular words or phrases are mentioned. While useful, such studies have limitations in that they cannot reveal patterns that are less reliant on using a specific phrase or word. Consider one such micro-meme that was popular near the end of 2016—a year considered especially eventful by some, due to a number of celebrity deaths and various political events. An image-based meme where people would post one photo showing themselves in the “beginning of 2016” and one “at the end of 2016”—with a comically dishevelled or disproportionately aged person on the latter photo—became a popular way of sending out the old year. These tweets were not grouped by any particular hashtag or keyword: but they did follow the

64 “A type of cliche which uses an old idiom formulaically in a new context,” per open source dictionary Wiktionary; named after the cliché that ‘inuit have a large number of words for snow’, a persistent bit of folk wisdom which is often repeated with inuit and snow replaced by whatever suits the context, e.g. ‘the Dutch have a large number of words for rain’ to illustrate the pluvial prowess of the country.

65 For example, Weerkamp, et al. (2011) and Hong et al. (2011) attempted to show national differences in Twitter usage by grouping tweets by language; Ratkiewicz, et al. (2011) investigate ‘astroturfing’ through statistical analyses of retweets and hashtags; Conover, et al. (2011) construct a model of political preference through someone’s usage of hashtags and speech patterns. But such analyses fail when they cannot rely on specific words or phrases being used often; this is a more general problem when analyzing large volumes of bottom-up annotated data. Recent developments in analytical algorithms has made computers more adept at detecting similarities in spite of this, making it conceivable that less rigid tagging or patterns in tweets can be analysed statistically in the near future as well, e.g. via machine learning (a technology known for its applications in pattern matching).
same general format, with the photos that were attached to show the toll the year had taken on them as the main difference and source of humour.

![Figure 13](image)

Such memes may be appealing through a broader sense of humour or be very domain-specific. The ‘at the end of 2016’ meme clearly appealed to a general idea of the past year being especially rough—something many people will have agreed on, given that many saw someone they were a fan of die or were affected by e.g. the American elections or Brexit. In other cases, memes may only appeal to a very specific subset of people and require a significant amount of subcultural capital to be understood, parodying events or people that are of limited fame outside their particular subcultural niche.

Such memes or micro-memes are difficult to systematically follow or analyse, because they cannot easily be grouped together; there is no single keyword within
them that allows grouping, like hashtags. As hashtags are the only method Twitter itself offers for grouping tweets, it is not possible to track the popularity or prevalence of such memes using the platform’s features; one would need to indiscriminately download a large number of tweets and apply novel statistical methods to it, something made difficult by the limits Twitter places on downloading tweets. An alternative is offered by various sites dedicated to cataloguing and disseminating memes. These—by their nature—do not cover other types of Twitter content, but they give an indication of how popular the platform is for memetic content. For example, KnowYourMeme—a wiki-like site that catalogues internet memes—lists over 500 separate memes under the ‘Twitter’ tag; while the site is community-edited, and offers little quantitative evidence of the popularity of the memes it covers, its pages contain many screenshots, links and examples that show how well Twitter works as a platform for memes; memes are additionally vetted by site editors and removed if deemed to obscure or fleeting.

While these may be used for comedy, this is not always the case; consider the hashtag #YesAllWomen, under which women shared their experiences with sexism and misogyny, and that spread in much the same way as more lighthearted memes do, through a viral pattern based on likes and retweets. It is not so much the case that memes and comedy specifically work well on Twitter as that the type of content that can easily become popular on Twitter includes comedy and memes: both short, easily recognisable forms that invite sharing and liking. But while political activism and other types of viral content only pop up in specific circumstances, comedy is more or less a constant—there are accounts dedicated to spreading it, sites and communities that archive particularly funny tweets and the genre can be split up in subcultures and genres with their own take on the phenomenon.

7.3.2. Comedy without virality: bash.org and IRC humour

Memes are not particularly prevalent on IRC. Obviously they are present on the platform, as they are everywhere; old chat logs and discussions show that in-jokes were certainly a fact of life. But unlike Twitter, there are no distinguishable ‘scenes’ or genres of IRC that are specifically comedic. One complicating factor here is that IRC chat is in many cases very ephemeral: while chat logs may be kept by individuals, they
are often not public, and those that are public are disproportionately often those of more ‘serious’ channels, such as those for covering news events or project coordination. And communication on IRC usually consists of a stream of short messages that reply to each other, a chat conversation: there is far less opportunity to deliberately craft a joke that can stand on its own and be shared from person to person, as can be done on Twitter. The comedy that exists on IRC is the comedy that exists in face-to-face communication—less deliberate, and more part of the standard set of tools that is at our disposal when in conversation with someone. Of course, this is not a golden rule—the *Hamnet* production discussed earlier in this chapter clearly was intended to be at least partially comedic, and was scripted in advance to be so. But at the same time *Hamnet* is notable precisely because it presents an exception to the rule, and is not representative of the average IRC conversation.

Yet even in a more mundane conversation, a particularly funny or noteworthy exchange may be recognized as such by the participants, and be deemed worth archiving and acknowledging somehow. IRC itself has no built-in to do this, no built-in ‘hall of fame’ in which bits of conversation can be saved for posterity, and no way to ‘like’ or ‘share’ a specific line or person: it was never built to retain information from conversations, only to facilitate them. Like in many other use cases of the platform, bots are one way to mitigate this limitation: many general-purpose bots contain commands to save noteworthy quotes, to be recalled by others later. But bots can only do so much in this case—like the human participants in a conversation, they are limited by the maximum character length IRC imposes on messages, and breaking up longer exchanges over multiple lines would quickly be disruptive to any ongoing conversation in the channel they are in.

This explains the popularity of “quote databases” or QDBs, websites on which people can submit fragments of conversation they found especially funny or otherwise noteworthy, to refer to later or for others to enjoy. Some of these may be dedicated to one channel or network but several exist that are intended to contain quotes from anywhere. The most prominent of these is simply called QDB or ‘bash.org’ after its

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66 For example, CloudBot, a popular and customizable IRC bot, has two commands for this ‘.q’, which allows saving an arbitrary quote that can be recalled later; and ‘.grab [nickname]’, which saves whatever the last line said by that nickname is. These quotes can then be recalled later through various other commands, at random or by searching for a particular nickname or quote.
domain name. Bash.org is a website that contains tens of thousands of quotes, most if not all from IRC conversations. People can vote on each quote to add or subtract points from its score, and the site has a page showing the 100 most popular quotes ranked by this score. Bash.org has been in operation since 1999, but as early as 1991 people were sharing “funny quotes” on, for example, the alt.irc Usenet group (see e.g. Williams 1991). Similar to how large numbers of retweets and likes are a mark of pride for comedy tweets, appearing on bash.org is a badge of honour for some people on IRC, as seen in for instance this QDB quote:

<S> i'm on bash.org
<S> FAMOURS
<S> err
<S> famous

This is acknowledged by those using the site and implicit to conversations on a meta-level: many of the quotes on the site reference the site itself. Often this is done in a derogatory manner, accusing people of saying outrageous things just so they can appear on bash.org. This indicates that the existence of quote databases such as bash.org has an effect on the conversation on IRC itself, enticing people to alter their style of speech to become more ‘quote-worthy’. Multiple (highly-rated) quotes also accuse people of intentionally making ‘funny’ spelling mistakes, or inventing some outrageous story to bait others into submitting what they say to the site, such as in this QDB quote from the site’s ‘Top 100’:

<M> yeh but chinese for dinner.. Peking Dick FTW
<D> ... LOL
<M> omg here we go
<D> Can you say bash.org?
<M> why? so it can join the other 1 million quotes of random people saying 'i love wang.. oops typo, i meant computers.'
<M> Screw this (...)

This can be likened to how on Twitter, people may adopt vernaculars or writing styles that have proven to be effective; there is if not a trend at least an accusation here that the same happens on IRC, and people adopt particularly quote-worthy styles.
of writing or intentionally make typing mistakes just so they can be featured on the site.

The question is what this says about IRC as a platform, since essentially bash.org is separate from it and has no direct connection to it save for the bits of chat logs people choose to submit. It is fair to say that IRC itself in most cases does not cultivate the hunt for recognition that is promoted by, for example, Twitter’s like- and retweet-fuelled system. On the other hand, a third-party off-network site like bash.org may tap into this urge, and bring the Twitter-style rat race to IRC if it becomes popular enough. But the impact of quote databases will always be limited, compared to something as embedded in a platform’s design as Twitter’s popularity metrics. In IRC’s case, people need to consciously seek out the databases and regularly check them to see if they are featured on it and what their score is. Browsing the quotes on the site also indicates that its audience is predominantly native to the more technology-oriented side of the platform, as a significant portion of the quotes involve jokes about computers and the internet. Many also contain homophobic or ethnic slurs, indicating that more progressive socializing-oriented channels such as #gayteen fall outside of the site’s audience.

Coupled with the fact that, in the flow of a conversation, there is far less opportunity to consciously craft a joke, this allows for the conclusion that while both IRC and Twitter are based on short messages, they are very different in how these short messages are treated. On Twitter there is an incentive to have messages stand on their own, and to write them just so that the perceived audience will like it (literally, but also through the ‘like’ button, or with a retweet)—this is rewarded with increased visibility of the message, an effect that is especially apparent in some genres of comedy tweeting, such as that of ‘weird Twitter’, ‘Black Twitter’ and their offshoots. On IRC, messages are virtually always part of a conversation, and consequently there are no built-in features or affordances that incentivize making individual lines in the conversation particularly noteworthy or visible. Even the conversation fragments in quote databases often consist of multiple lines that would make little sense individually: context is important, and it is the conversation that is noteworthy, not the lines themselves.
This is perhaps the great difference between Twitter and IRC when it comes to comedy: Twitter affords virality very well, and it is virality—the ability for something to be spread among a lot of people in a short time—that makes comedy potent. Memes are especially viral, and it is thus evident why they are especially prevalent on Twitter; while it also explains why both comedy in general and memes specifically have never played an especially large role—beyond what could be expected of conversation in general—on the platform.

7.4. Unexpected expression: online comedy as a surprise hit

Despite such differences, it would be unfair to say that either IRC or Twitter is stronger when it comes to the range of content it affords and how affective or performative its content can be. Rather, each platform has its own strengths. IRC is uniquely positioned to be a potent cradle of communities; it allows rich and affective conversations, it is structured to be especially amenable to relatively small, well-defined social groups of people, and it is pseudonymous enough that people feel less inhibited to bring conversations to an intimate and rich level, which is afforded additionally through commands such as /me. But Twitter can also afford community, to an extent; indeed, both IRC and Twitter score well in the Sense of Community model, which indicates that both at least have the potential to create such a sense.

While IRC may be more conductive to making new connections to people and affords a wider range of performative practices, Twitter can serve as an excellent additional mode of interaction for existing relationships; its public availability means the focus is less upon cultivating new ties and more on casual sharing of content with existing ones.

A similar pattern of strengths and weaknesses is seen when it comes to a specific form of content, comedy. Twitter has spawned a rich Anglophone comedy scene, with various distinct sub-genres and a clear emphasis on style and tone over content. Its emphasis on liking and retweeting coupled with the brevity of these forms of comedy ensures that funny tweets are easily spread to a large audience and then in turn may
spawn short-lived trends in which people copy such styles of comedy to produce their own variations upon it, again incentivized by the prospect of likes and retweets. In this case, it is IRC that is less versatile and powerful; while comedy is certainly a recognized and established genre on the platform, there are far fewer features that specifically afford it, and this is by necessity outsourced to services like bash.org’s QDB. And while there is some evidence that the prospect of a funny line being immortalized on QDB acts as an incentive for people to appropriate said style, this mechanism is clearly far less powerful than on Twitter, and following the quotes on the site, QDB’s audience is mostly limited to a small subgroup of adolescent technology enthusiasts.

On both IRC and Twitter, then, there is a clear link between design choices, features and constraints on the one hand, and the type of content and conversation that is afforded through those on the other hand. IRC’s synchronous, contained, anonymous but rich conversation affords performativity and the formation of communities in a way that Twitter can’t. Twitter on the other hand, through its various features that amplify and rebroadcast content, affords the dissemination of broadly appealing and witty content particularly well.

But importantly, while there is in some cases a clear link between a particular design choice and the types of conversation that sprung up on the platform later, affording that was often not the intent behind such a choice. It would be fair to say that in IRC’s case, there was at least a vague goal of affording community formation, with the various types of channels that were built into the platform; but even these channel types emerged organically from a combination of demands from the people using the platforms and the whims of the programmers of the software. Likewise, commands like /me were not added as part of a concerted effort to make the platform more performative, but as a logical amalgamation of existing jargon and commands from MUDs. On Twitter, likes and retweets have a similar history, retweets in particular having been appropriated from user practices; but in combination with a general-purpose ‘like’ the configuration of the platform affords viral content that evokes a positive emotion particularly well, hence the prolific comedy scene on the platform.

This can be likened to the more explicit dynamic between the platform and its users described in chapters four and five. In the case of specific features like retweets,
hashtags, mentions, channels and nickname colours, it is relatively straightforward to map the process through which these emerged. In the case of more fuzzy concepts such as ‘community’, ‘performativity’ or ‘comedy’, the dynamic is murkier: but again, people find ways of using the platform that were not necessarily intended or even thought of by its creators, or at least popularize certain practises that the platforms were never explicitly designed for.

A longitudinal look at the platforms thus reveals how they evolve to sometimes transcend their creators in some respects. In some ways, this can be a ‘butterfly effect’ type of cause-and-effect chain, where seemingly innocuous decisions or influences have a large impact on how the platform is later used—such as how BITNET’s rudimentary, numerical channels would evolve into a prime facilitator of communities on IRC, or how the first instance of someone innocuously repeating what someone else on Twitter had said would grow into a feature that would be partly responsible for an entire genre of tweets. To be clear, this is not a teleological explanation of these practices; again, there was no plan here of transforming these platforms. But transformed they were, and an analysis of these transformations reveals how a platform’s affordances are a combination of inventiveness on the part of those using the platforms, and design decisions by those platforms’ creators that crystallize in unexpected but potent new forms of expression.
8. Images and imaginaries: what people think of and on platforms

It is a triumph more glorious, because far more useful to mankind, than was ever won by conqueror on the field of battle. May the Atlantic telegraph, under the blessing of Heaven, prove to be a bond of perpetual peace and friendship between the kindred nations, and an instrument destined by Divine Providence to diffuse religion, civilization, liberty, and law throughout the world.

(President James Buchanan’s response to the first Trans-Atlantic telegraph message, 1866)

In the previous chapters I have explored various types of usage of Twitter and IRC and particularly looked at content shared on the platforms: how people organise, what genres of discourse work well, what affordances enable these genres and not others. These are all relatively concrete examples of how the platforms are used: organically emerging types of speech with clear shared characteristics, patterns that emerge over time and create a certain blueprint for others to build upon. These provide valuable insights into the life of a platform, glimpses of how its symbiotic relationship with its users works. I have also analysed from various perspectives the way a platform can change; how through this symbiosis of platform affordances and people’s wishes, people start using the platform for different things than they did before, and the platform itself changes as well.

Lurking in the background but never quite getting to the forefront is a more abstract conceptualisation of the platform—an image of it that exists outside of it, that is disseminated through media, help guides and FAQs, and has in it an idea of what the platform is—what it is useful for, what kind of people can be found on it, who reads it. I have discussed specific versions of this—e.g. the idea that Twitter is a place to go to discuss GamerGate, and why this idea exists among those discussing it—but in this chapter I want to explore the more general ideas of the platform as being a place where some kind of activity happens, within the confines set by the computational system the platform is. This again recalls van Dijck's observation about platforms—that...
they make things happen (2013p, p.180). Previous chapters have answered the question of what the platform makes happen in a narrow sense—here I answer it in a broader sense, extracting a more general idea of what one can do on and with Twitter and IRC from sources such as news articles, FAQs, and (popular) scholarly literature. I again take a historical perspective here, to roughly describe how this imaginary of Twitter and IRC developed through the platforms’ lives, and what its importance was (if any) to the platforms themselves. I discussed this concept of ‘media imaginaries’ earlier in more general terms in chapter 2. In this chapter I take a closer look at the imaginaries about these platforms that have existed and how they may be related to what the platform affords and how it is used.

These ‘imagined platforms’ are not limited to those using them—anyone may read a news article discussing the merits of Twitter, even if they are not interested in using it. They will likely take some of the content of that news article and form their own idea of what Twitter is, based on what they have read or heard about the platform. These imaginaries then are a version of it that involves ideas about what kind of people use it, what it is used for, what its merits and dangers are—in general terms, given the number of people using the platform. And once they start using Twitter or IRC, they thus do so with a certain imagined version of it in mind. As this will inform their further interactions with the platforms, it is therefore useful to chart this general imagination, which I do in the first half of this chapter.

Over time, as people use the platform, the imagined becomes less imagined and more concrete—their general idea of what the platform can be used for is augmented with a more specific personal version of the imagined platform, being the platform as they perceive and use it. This can overlap with but also exist separately from the general imagined platform—their own usage may be typical or atypical. But anyhow people will have an idea about what the platform can do for them and others, informed by how the platform is portrayed in media and other sources as well as their own experience in using it.

At its core, IRC and Twitter are communication platforms. Any imagined version, or expectation of it is thus a vision of a platform on which one person or group of persons communicates with a partner. In the general version of the imagined platform any concept of what kind of people these are is vague, necessarily because of the large
number of people using the platform. But in the specific imagined platform, that takes root once one starts to actually use the platform themselves, one half of this equation is made concrete: the sender is known, as it is either oneself or whoever they are communicating with. But the recipient remains, provisionally, unknown: on both Twitter and IRC, messages are broadcasted to an audience that is never completely visible, what Marwick and boyd call an “imagined audience” (2011 p.118; see also boyd, 2007, p.131). This audience is at times unknown, and sometimes unknowable. In the second half of this chapter I explore how people on IRC and Twitter negotiate this fact—how they imagine their audiences, the 'missing piece of the puzzle' completing the constellation of general and specific imagined platforms.

I conclude that there is a surprising and perhaps paradoxical disconnect between the general imagined platform and the more narrow imagined audience. The general is relatively generic, with differences between the platforms but also common threads, and there are clear parallels between how IRC and Twitter are imagined as platforms. The specific imagined audience however is very particular to the platform at hand, and can be clearly linked to the respective features and affordances of the platform.

The former—the general—is important to analyse particularly related to a platform's affordances and features because the imagined platform establishes the worth of the platform in a wider context. One of the main tenets of this thesis is that platforms do not exist in a vacuum—they are influenced by other platforms, but from this follows that they may also influence other platforms themselves. Investigating the precise nature of that influence is beyond the scope of this thesis; but an impression of what their popular image is indicates at least what kind of impression they make on their wider context. The latter—the specific—is important to analyse because it reveals how people deal with an unknowable part of the imagined once it becomes concrete enough to be involved in their practice on the platform in question. This is something that essentially underlies everything else that happens on the platform—everyone has their own ideas of who will read their post and adjusts them accordingly. This chapter therefore investigates how these ideas about audience affect practice, adding a new level of analysis that underlies that what has been described in previous chapters.
8.1. **Images of a platform: IRC and Twitter as talked about elsewhere**

It is fitting to first take a look at IRC, as it is a product of the 1980s and 1990s—it appeared in, and contributed to, a context that was formative to the internet Twitter would only later be part of. Many visions of what the platform could be suitable for were infused with the general techno-utopianism that was prevalent in the early 1990s. From popular accounts like Francisco van Jole’s *The Internet Sensation* to discourse in newsgroups and on mailing lists, there was a general idea that in spite of its problems, IRC was an exciting new mode of communication that enabled new ways of talking to each other: in late 1989, as the first systems outside of Finland were connected to the network, a network administrator remarked in a Usenet thread in *compunix.questions* that they liked the “real-time interactive communication in a convenient, cheap manner with people from around the globe” and that

> [m]any people have told me though how they like it because of the cultural education they get from people in Finland. With Japan coming on-line, further potential for cultural exchange is presenting itself. (...) It is pretty popular and it’s popularity is increasing.  

It should however be noted that in similar Usenet discussions it was also described as one of “several ‘chat’ programs out there”; multiple similar initiatives existed, e.g. BITNET Relay Chat (which held out for a while after IRC was created), the similar but ill-fated DECNET Relay Chat for the DECNET network, and ForumNet/ICB (discussed in chapter seven), and especially in its early incarnation there was not necessarily a lot of difference between IRC and those platforms; all offered a comparable suite of features that allowed text-based group chat between peers.

But as more people started using the platform and it gained more features, there was a distinctively positive sentiment about its possibilities, at least initially. As the quote above illustrates, one of the aspects people were especially enthusiastic about was the fact that IRC made it possible to cheaply talk to people in other countries, something only available through expensive long-distance calls to most people at the

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67 See Appendix A for more information on the Usenet archives that were consulted.
time (see also e.g. irc-faq, 1993). Beyond just being a fun way to talk with strangers, the sentiment was that this would help bring people together, democratize news reporting, and circumvent censorship, a feeling reinforced by powerful examples of this such as the coverage of various crises like the Gulf War and the 1991 Soviet Coup, as described in chapter six. Such examples were often mentioned in articles and guides about IRC, for instance the various FAQs. There was no single FAQ everyone would have referred to; FAQs would be created by separate IRC networks or communities, and were primarily intended for their own audience. But most of them do refer to IRC’s purported history of ‘citizen journalism’. IRC’s affordances for citizen journalism additionally remained a point of pride well beyond the early 1990s; it is for example referred to in the alt.irc FAQ (Trillian Rose, 1993), the Undernet FAQ (Grant and Mirashi, 1996), the IRC information website irchelp.org’s FAQ (Lo, 1996) and the general guide A Short IRC Primer (Pioch, 1997). Wikipedia, which in some ways has assumed the introductory function FAQs used to hold, also prominently mentions how IRC was used during the Coup and Gulf War incidents, as of 2017. That IRC was the ‘poster child’ for this kind of discourse despite its similarity to other contemporary chat networks—which could at least technically have been used in the same way—can be attributed to the fact that it was internet-based; it could thus reach more people than the more limited BITNET and DECNET platforms.

These imaginaries, of democratisation and cooperation are of course well in line with techno-utopian thought. This was generally speaking not the cyber-independence strand of utopianism that was exemplified by cyberpunk-inspired manifestos such as The Conscience of a Hacker (Blankenstein, 1986) or John Perry Barlow’s A declaration of the independence of cyberspace (1996), in which a hallucinatory vision of man freed from the shackles of the physical world was conjured. Instead, the hopes were on the platform to be a form of connection: not between stateless cyborgs, but ordinary people living wherever that would be able to share their experiences and report about their lives, in line with more measured analyses such as Sherry Turkle’s and Howard Rheingold’s work from the early 1990s.

This is especially interesting considering the tension between IRC and MUDs, as detailed in previous chapters. While both had similar affordances, after a fashion, MUDs were far more focused on role-playing and identity play than IRC, and while a
measure of people’s offline lives could filter through to their online role-playing, much of it was always fantasy. On IRC people did certainly adopt fake identities—for example, newsgroups reveal recurring complaints about men pretending to be women on the platform68—but even if they did so, the fake identity was generally realistic rather than fantastical, or an exaggeration of some aspect of their selves (see e.g. Turkle 1997), and such practices were often limited to more casual, flirty channels. More serious discussions were often moderated relatively strictly, as seen in the analysis of coverage of the Gulf War on IRC. Reading between the lines the general attitude seems to have been that MUDs and IRC complemented each other: those who wanted role-playing could go play on MUDs, while those who preferred ‘real’ conversation and serious, real-world news would go to IRC, which was seen as more suitable for those purposes; IRC was a place for conversation about real-world issues, and contemporary discussion about it emphasizes how the platform affords casual conversation and free discussion of real-world issues. This sense of IRC as being more ‘grounded’ than MUDs was more of a social projection than anything directly determined by its affordances and features—IRC had features that were distinctly MUD-like, like /me, and could certainly be made to act like one as well via bots and scripts. The difference was mostly in audience and politics.

8.1.1. Good publicity: the power of early successes

Curiously, in spite of its outward image of a platform for friendly, casual conversation about real-life issues and getting the latest news from people ‘on the ground’, IRC was often referred to as an ‘anarchy’ on both internal mailing lists and in newsgroups. This was more so the case early in the life of the network than later; initially people were generally free to add their own servers to the network, with all the power relations, technical incompatibilities and stability problems that brought with it. It was not unheard of to be ‘killed’ or ‘dropped’ randomly, due to a server suddenly disconnecting or a rogue operator deciding to close a connection for whatever reason. This is likely another factor that contributed to the lack of MUD-style

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68 As the satirical How to meet women on IRC guide on alt.irc put it, “The main thing to remember when venturing out into IRC is that you'll have a lot of competition. 99% of the men you meet on IRC are depraved, [s]ex-starved and desperate men like yourself. The other thing to remember is that 99% of the women you meet on there are also depraved, sex-starved and desperate men like you.”
popularity of the platform; it was not very conducive to an immersive, narrative-driven role playing experience due to the constant risk of such intrusions and interruptions. The platform was also being developed more actively, updates to the software being released relatively often and with an accompanying lively debate on mailing lists about the direction this development should go in. This debate got fairly heated sometimes, especially when it came to policing conduct on the network—some arguing for stricter rules, others arguing that IRC should stay a free-for-all because it encouraged lively conversation and creativity—the values that were often repeated in advertisements and FAQS.

In February 1992, an operator who had also been an active FAQ contributor proposed a detailed set of rules for the platform in alt.irc, specifying what to do with problematic operators or servers. From their proposal, it is clear that they also saw IRC’s anarchic nature as a social problem rather than something stemming from the software features of the platform:

This is NOT a technical problem. Programmers can not fix it. Its a social problem. Its like real life. If you dont like someone, dont put yourself in the same place with them. I you have no other option, then DEAL WITH IT! Grow up and learn patience and tolerance.

The perceived anarchic nature of the platform was a major point of discussion during the early years and had some tangible effects as well. When the operator made their suggestions, IRC was still united, but soon after the platform would become divided among several networks, each with varying levels of anarchy, from the short-lived and truly anarchic (everyone could add their server to the network) Anet to more strictly moderated servers like freenode or EFNet. Arguably the platform as a whole was still an anarchy even after servers like ANet disappeared; anyone could start their own server with their own rules, after all. But while the fact that IRC was an anarchy was mostly emphasized in ‘internal’ discussions about the platform—those on developer mailing lists and the alt.irc newsgroup—more outward-facing and mainstream accounts continue to emphasize the platform’s potential for cooperation, meeting new people from abroad, et cetera. Newsgroup discussions outside the alt.irc group from the early 1990s portray the platform as a place to meet people with similar
interests, and messages from this time period that mention IRC show a wide variety of such calls from various types of groups such as one in soc.religion.christian looking for other IRC users; a proposal in the biological sciences group bionet.users.addresses promoting IRC as a place to coordinate educational activities, or a proposal in the AI-themed group comp.ai.neural-nets to set up an “on-line neural net telesymposium” on IRC. Obviously, role-playing and assorted casual conversation had a place on the platform too, as evidenced by the occasional complaints about it and the various bots and scripts to facilitate it, but this type of activity was far less commonly discussed; it was not part of how the platform was ‘advertised’ by those using it.

This is in fact very similar to the expectations people would later have for Twitter, at least when the platform was initially released. While Twitter was obviously far less of an anarchy—it being controlled by Twitter, Inc.—contemporary accounts seem to largely reflect two distinct narratives: on the one hand, the idea that Twitter was a fairly useless curiosity full of the “inane musings of strangers” (Trapani, 2007, on Lifehacker), “another pointless distraction in a world already suffering information overload” (Johnson, 2007, in the Guardian), or succinctly “twaddle” (Gordon, 2009, in the Telegraph). On the other hand, a more positive narrative emphasized the connective and democratizing potential of the platform, much as had happened for IRC. Even the emphasis on that platform’s track record of reporting breaking news carried over to Twitter; the platform’s role in alerting people to events such as the 2008 Mumbai terrorist attack, a plane crash in Denver or the effects of Hurricane Gustav was widely covered in news and figured in ‘best of the year’-type articles on major technology news sites such as Mashable, which argued that Twitter “has (...) evolved into a medium for breaking national and international news, oftentimes before major media outlets” (Carta, 2008), but also more traditional newspapers such as the Telegraph, which praised Twitter’s “crucial role in disseminating information and breaking news in real time” (Beaumont, 2008). Focusing more on the potential of the platform for social interaction and meeting new people, Wired lauded its power to “give a group of people a sense of itself, making possible weird, fascinating feats of coordination” (Thompson, 2007).

What is interesting here is that both on IRC and Twitter this emphasis on the platforms as, particularly, a facilitator of ‘citizen journalism’ and global community-
forming persisted beyond the early years of the platform. While IRC was not talked about often after the turn of the century due to its decline in popularity, descriptions of it from the second half of the 1990s still mention its qualities for information-gathering. FAQs that circulated on Usenet, such as the ones mentioned earlier in this chapter, usually mentioned the Soviet coup and Gulf War coverage, showing how enduring these early examples were. Meanwhile, Twitter’s role in global politics—e.g. the Arab Spring, Syrian civil war or the U.S.A.’s elections—are often emphasized as examples of how the platform gives ‘ordinary’ people a voice, as has been explored in more detail in chapter six.

Both Twitter and IRC were and are thus expected by some to bridge international divides, unite people from different societies, et cetera. This is a well-known type of expectation projected on virtually every new communication medium; take for example this anonymous musing on the telegraph, quoted in Tom Standage’s history of it, The Victorian Internet:

The different nations and races of men will stand, as it were, in presence of one another. They will know one another better. (...) They may be moved by common sympathies and swayed by common interests. (quoted in Standage, 1998, p.98)

This is remarkably similar to David Lawrence’s observations about IRC, quoted earlier in this chapter. That is not to say that it is not a useful observation to make for these newer platforms—they may very well be agents of democratisation and community-building—but it should be clear that it is a general expectation that can (and does) apply to virtually any communication technology or platform. Indeed, in his archaeology of attitudes towards communication media, Imar de Vries identifies a “long tradition of regarding new communication technologies as the latest step towards the utopian unification of minds” (2012, p.123) into which observations of IRC and Twitter fit neatly. Online platforms are perhaps particularly likely to have such expectations ascribed to them, as the internet is an (increasingly) global phenomenon with a larger and larger number of people potentially benefiting from anything beneficial it may afford. These expectations are thus best characterised as an expectation of the internet projected onto a specific platform; and while platforms such as Twitter and IRC may or may not have features that make them particularly
well-positioned to fulfil these expectations, the expectation itself would seem to be mostly divorced from such details, given the fact that it has been applied with little variation to a very wide range of platforms.

Yet despite the general failure (so far) of technology to unite the world in a peaceful, understanding, globe-spanning community, there are aspects of both Twitter and IRC that could, indeed, reasonably be expected to promote international cooperation and understanding, if not in the utopian measures contained in aforementioned visions. IRC in fact delivered on the expectation of uniting people from countries all over the world, even if some countries were better represented than others (recall how during the Gulf War discussions on IRC, people remarked that there were “no arab countries on the net”)—this is partly an extension of the internet itself connecting people, but IRC as a platform on it gave them a new real-time way to talk to each other. And Twitter does make it possible to get news updates from anyone anywhere—a traditional established newspaper and a mother posting updates from the streets of Aleppo are right next to each other in the Twitter timeline. While these achievements are indeed general enough that they can be seen as a fulfilment of the potential inherent to the internet’s affordances rather than the platforms’, the fact remains that Twitter and IRC were the places these expectations were fulfilled on a hitherto unseen scale in specific ways—group conversation on IRC, ‘microblogging’ on Twitter.

This is however very much a post-hoc observation and perhaps rationalisation, and has only little direct connection to the platforms’ design and affordances. IRC was not made or expected to connect people worldwide, but to facilitate chat on a specific Finnish BBS; Twitter was not made or expected to be a beacon of citizen journalism, but to allow people to casually share their personal status. Instead, these appropriations of the platform were unforeseen and then seized upon by people using it to legitimize it, and frame the platform as—in both IRC’s and Twitter’s cases—a place for international conversation, unfiltered news and up-to-date information. As evidenced by the oft-repeated references to early successes of IRC in FAQs and newsgroups discussions, it is apparent how powerful a limited set of examples can be in shaping the perception of a platform. That these examples retain currency two decades after they were relevant is not necessarily because nothing as wholesome
happened on IRC since then, but more likely because they were a good enough confirmation of the archetypical expectation that the platform would bridge borders and unite people, that have only become more legendary as they have aged; the implication being that if the platform could be used in such a revolutionary, unifying manner this early in its existence, surely that speaks for it in a more general way as well.

8.1.2. Changing perspectives: a platform’s image and its (dis)connection with reality

It is worth discussing in more detail to what extent this emphasis on both platforms as a place for citizen journalism and general utopia actually match the reality of what people do on it; even if discussions about them on other platforms evoke this imagery, it remains the question how much of it matches reality. Obviously, to some extent this is indeed what these platforms are; this much is evidenced by the particular instances of it that are used as legitimizing examples. But in the case of IRC, much of what takes place on its networks can be characterised as ‘casual conversation’; weakly guided discussion in thematic channels that may veer into the political every now and then but are in most cases anything but focused on reporting news.

Accounts of IRC usage from the early 1990s often mention the platform’s aforementioned news gathering potential in their introduction, only to focus on far less journalistic usage of the platform subsequently; the FAQs mentioned earlier are happy to refer to Gulf War and Soviet Coup coverage in their introduction to then never mention it again, instead pointing to casual channels like #hottub (see e.g. Lo, 1996). This reinforces the reading of continued emphasis on IRC’s usage in coverage of e.g. the Gulf War as a legitimizing and perhaps even apologetic account of the platform’s possibilities. This emphasis on an especially noble type of usage carries with it, from this perspective, the implication that other types of use such as casual conversation, flirting or mock weddings—less wholesome, but certainly not mischievous—are less ‘worthy’ of emphasis and will not be seen as significant by outsiders. This too is a recurring pattern; recall the heated discussion about BITNET Relay Chat’s merits, in which system administrators advocated closing down the network because it was used for frivolous activity while the people using the platform argued that in fact it was worth maintaining because it was used for worthwhile
endeavours such as students asking questions about their homework. In fact, such more noble appropriations of the platform were in the minority on BITNET as well; while undoubtedly there was some academic discussion on the platform, reports in contemporary internet magazines and BITNET-themed mailing lists indicate that casual conversation was far more popular\textsuperscript{69}. But the simple fact that it was used for serious matters as well was useful to appeal to as proof that the platform as a whole had some unambiguous merits.

These positive portrayals of these platforms are not entirely static—they wax and wane, and evolve within their context. Even though the Gulf War coverage remains a stalwart in coverage of IRC, later texts make note of the fact that the platform splintered into multiple networks and there are many sources cynically complaining about harassment and sexism\textsuperscript{70}. As more accessible platforms emerged, IRC also developed an image of being ‘nerdy’ and challenging for newcomers. Another example is the gradual shift in perception of Twitter towards the negative and cynical following such episodes as GamerGate and Donald Trump’s election. Whereas criticism of Twitter as a beacon of democratic news dissemination had mostly been limited to academic circles and op-eds before, these incidents brought an image of Twitter as a hotbed of hate and false information to the forefront, which was also reflected in news coverage mentioning the platform; the platform being mentioned in the same breath as the alt-right movement (Grey Ellis, 2016, on \textit{Wired}) and its business suffering was framed as being caused by “the service’s reputation for abusive behaviour” (McCormick, 2016, on \textit{The Verge}). Contrasting this later vision of Twitter with the decidedly more optimistic take on the platform circa the Arab spring is especially interesting; the negative uses of the platform that received emphasis after GamerGate brought affordances for manipulation of debate and harassment to the forefront that

\textsuperscript{69} Traces of this include, among others, reports of members of the famous German Chaos Computer Club using the platform to discuss new hacking strategies (BITLIST, issue 32), a sample of active nicknames prominently including ‘SuperStud’, ‘NeedSex’ and ‘Cuddles’ (NetMonth, August 1986), complaints about “14 people on channel one trying to get a date and some guy that was sending ghostbuster pictures” (ibid.), the assertion that “what Relay is generally used for [is] recreation” (NetMonth, September 1986), and a call for action to “convince the BITNET community that Relay is [also] a valuable research tool” (NetMonth, January 1988). In comparison, actual examples or discussions of academic usage of the platform are scarce.

\textsuperscript{70} E.g. the earlier-mentioned guides on ‘cybersex’ on IRC, and many threads on the same topic in alt.irc; the first archived post referring to cybersex on the platform there only appears in 1993, 5 years after its founding, referring to IRC users as “slobbering depraved cybersex dabblers”.

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had already existed during this earlier episode, yet were not thought of as especially problematic and sometimes even as strengths—for example in how anonymity made the platform useful for activists under oppressive regimes, while it was also abused by harrassers during GamerGate. Even prominent criticisms of optimistic takes on the role of Twitter during the Arab Spring, such as the work of Evgeny Morozov, focused on the potential for surveillance on the platform and the demographic imbalances of the platforms’ user base rather than hurtful or misinforming tweet content.

This can, of course, in part be explained by the lack of such usage of Twitter at the time; the Arab Spring as a subject of debate was perhaps less politically divisive among the predominantly Western audience of Twitter and thus less likely to invite flame wars or misinformation campaigns. But that in itself illustrates how the image of Twitter is shifting and becomes increasingly particular to the platform; even if early imaginaries tied into a more general techno-utopian vision of social media that is shared between platforms and through time, particular appropriations of the platform can eventually transform such visions into more specific and appropriate imaginaries that closely follow emerging patterns of use. The Arab Spring in particular also highlights how popular images of what a platform is used for and what it can do (coordinate resistance under oppressive Middle-Eastern regimes) matches a pre-conceived vision of what the platform should do more than reality; as has been explored in more detail in chapter six, Twitter was not in fact used by people in the countries involved in the Arab Spring to the extent popular coverage at the time indicated—but that idea did fit the expectation that Twitter could be a force of democratization well, and served a similar legitimizing purpose as IRC advocates’ emphasis on its role in disseminating news about the Soviet coup in 1991. In Twitter’s case, this would only be corrected later when more and more rebuttals of this vision were published in mainstream and academic press. The later, more realistic adjustment of these images of Twitter and IRC again fits a pattern shared among utopian conceptualisations of communication platforms, in which “new media are initially met with high hopes, before they become mundane” (de Vries, 2012, p.123).

8.1.3. Friends and contacts: in the end it’s about the people

How such patterns of use can in some cases in fact emerge as a result of specific platform affordances has been explored in chapter seven; a combination of short
messages and incentives to post ‘viral’ content affords comedy particularly well, for example; and in the case of a plane crash or imminent hurricane, it is not hard to see how Twitter can serve as a conduit for passers-by breaking the news about it. But the affordances that enable these patterns remain relatively static, while the images of the platforms change, following the pattern described above. As seen, one factor is constituted by the criticisms published after utopian visions initially dominate media, e.g. Evgeny Morozov’s work (and popular appropriations of it) in response to coverage of the Arab Spring. Another prominent factor here is new audiences discovering the platform or new topics of conversation finding a (more) prominent place on the platform; such as in the case of GamerGate, which involved many active users of Twitter as key players, or various elections, in which candidates used the platform as a tool to communicate with prospective voters (see e.g. Graham, et al., 2016, Wang, et al., 2016).

It should be noted here that early coverage or endorsements of both IRC and Twitter are often not specifically positive about the platform’s particular features; the main reason to recommend the platforms seems to be the simple fact that many other people are using it, not more particular affordances or features that might be an incentive for people to try it out. An early ‘advertisement’ for IRC included with the software package opened with pointing out its attractiveness to people who “wanted to talk with other computer users in other parts of the world” (Trim, 1990) and generally emphasized the fact that there were interesting people to talk to on the platform, rather than pointing out specific features:

I will tell you that the program can be very addictive once you begin to make friends and contacts on IRC ;) .. and the Finnish people are as curious about Americans as we are about them - so the topics can become very interesting sometimes. I think I have talked about everything from Politics to Living expenses in the United States - in return they have told me about life in Finnland (which is quite interesting!)

71 IRC was free software, so this was not an advertisement that would be published in a magazine or newspaper to sell copies, but a text file included with the IRC software package that explained what it could do.
The real draw thus seems to be the people that can be found on the platform; people from faraway countries or with esoteric interests on IRC, celebrities and other opinion leaders on Twitter: “thanks to the public enthusiasm of several celebrity twitterers, this new mode of communication has suddenly become a national craze” (Atkins, 2009, in the Telegraph). There is an obvious link here to the well-known network effect, the fact that one crucial factor for a platform’s success is whether the people one wants to connect with are present on it (see e.g. Papacharissi, 2009). Thus, when announcing IRC or Twitter, it makes sense to put emphasis on the fact that for those platforms, this will be the case. This again has little connection to the goals of the platforms’ creators. Thus almost immediately the platform is conceptually expropriated; obviously its creators or those developing it still have power to change it, but they have no power over what people like about it, and what reasons they find to use it. They can hope that the software they create affords a type of interaction that elicits a response like those described above—a pattern of use that corresponds to the general hopes held for all communication platforms, or a particularly potent mix of people that is interesting enough to attract other people. But the platform as imagined by the public is largely divorced from their intentions, and popularity and public image is largely formed by a combination of a generally applicable evolving imagination combined with a desire to connect with all the interesting people on the platform.

Conversely then, do these ideas of what a platform can do have the power to influence the development of these platforms? The creators are after all the ones who have the power to implement or reconfigure features; agency of the people using the platform only extends to how they use the platform as it is, and any further changes are subject to the fiat of the platform’s owner. In some cases this limited form of agency may be enough, as seen in the analysis of the hashtag’s emergence in chapter four, and anyway the initial configuration of the platform may be attractive enough to convince people to use and keep using it. But the platform’s owners can easily ignore people’s desires for a perceived more optimal platform if they do not align with their own plans, as illustrated by the fact that Twitter never implemented anything like the ‘group messaging’ that was proposed and requested by many people in the early days of the platform.
But there is in fact little reason for a platform’s developer to be concerned by these imaginaries, as far as the development of the platform is concerned; they may choose to put emphasis on supporting a particular type of usage that has informed popular discourse concerning the platform, but in most cases these imaginaries fit well enough within the current ‘direction’ of the platform. It could be argued that this is less the case when a platform is still young, as the platform has less of its own identity at this point and thinking about it is more likely to be informed by other platforms; hence perhaps the demand for group messaging on Twitter, something that was a staple feature of many contemporary platforms, including those similar to Twitter, such as Jaiku. But whether the platform had group messaging as a feature or not had little bearing on more important selling points such as the promise to read the latest news before it hit the papers, or see the latest updates from celebrities, and thus whether it is implemented or not has little immediate impact on the platform as generally imagined by the public.

Yet there are cases in which this does not apply. This particularly concerns more negative discourse surrounding the platform, such as the complaints about harassment following GamerGate and the rise of the alt-right on Twitter; or outright abuse of the platform, such as during the ‘bot wars’ on IRC. The reaction to these ‘crises’ was different; Twitter started rolling out features that were aimed at addressing these complaints at a very slow pace, while on IRC, where there was no one entity to turn to with complaints, the administrators of individual networks and channels implemented features to address the sources of discontent—something that is obviously not possible on Twitter. On the other hand, rules and features intended to combat harassment on IRC may differ from network to network, precisely because of this lack of oversight, while Twitter offers a uniform set of tools that is available throughout the platform and through every interface. But on both platforms, changing imaginations of the platform had the power to effect change, though not in a direct and immediately effective way, but rather through a number of small or distributed changes.
8.1.4. History repeats

There are thus two things to note here concerning the general imagined platforms Twitter and IRC evoke. First, both fit a pattern that has been seen accompanying the introduction of virtually any new communication technology; expectations of increased cooperation, democratization, et cetera, thanks to the new platform’s capacity of connecting hitherto unconnected people. This is followed by an injection of realism through which the inevitable problems of the platform, combined with the fact that it was in fact used for some activities that fit the original expectations, gives people a set of examples that they feel legitimises the platform as a worthy endeavour in spite of its capacity for misbehaviour. Second, such expectations and visions are, paradoxically, mostly formulated in response to what happens on the platforms, rather than as more ‘pure’ imaginations of what can happen based on the features and affordances a platform has.

In other words, expectations are formed based on either a general idea of what communication can do for people, or more specific instances of communication that happen on a platform. The features and affordances of a platform seem to have relatively little direct impact on such expectations. Of course, they do have an indirect impact, in shaping the way people use these platforms of communication; this has been explored in the previous chapters. But in forming these expectations, the platforms themselves seem to be conceptualised as ‘a way to communicate’, without much further specification; detail is added through subsequent appropriations of that communication method rather than the goals, interfaces et cetera that have been built into the platform by its creators, which many remain unaware of. The affordances of a platform thus remain in the background, rarely playing an explicit role in the discourse about a platform yet simultaneously indirectly shaping much of the image a platform attains after its ‘honeymoon’.

In addition to these general expectations of what a platform may mean for the people using it, there are many other expectations—some small, some large—that are part of how people see and use it. In the next section I will therefore take a closer look at one of these more specific kinds of expectation: how affordances shape the implicit expectations people have of the audience that will see what they share on IRC and Twitter, and how they cope with these imagined audiences.
8.2. Images of an audience: how to deal with an audience

On a smaller scale, and as a subset of their general ideas about a platform, people imagine their audiences; the people reading their tweets or chat lines, those who they have in mind when writing and consciously or subconsciously craft their writing for. This imagined audience is practically relevant for anyone using the platform, as it is who they write tweets or messages for; the people they expect to read what they have to say. On one level, this audience is articulated explicitly by the platform; on Twitter, a list of people following an account may be retrieved from a profile page, and on IRC the /names command can be used to see a list of all other people in a channel; and many clients permanently display this list of names on the side of the screen. In some cases it is then possible to look up further information about those who are members of the audience, and get a clear idea of what kind of people one is writing for.

But a simple list of names is not always enough to form an accurate impression of an audience. On Twitter, the wider audience includes those who may see tweets via others retweeting them; or people arriving at a profile through other websites or by clicking a name in tweets mentioning it. On IRC, the list of people inside a channel is fairly unambiguous, and those not on the list have no direct way of seeing what happens inside the channel. But as generally speaking people are more anonymous on that platform, it is less clear what people are behind the names in that list; while on Twitter one may click through to someone’s profile to get a quick impression of what they use the platform for, identities are far less transparent on IRC. Thus audiences are to some extent unknown and even unknowable on both platforms.

Yet people will have an audience in mind when writing; partly based on information gathered through the platforms’ interfaces, partly conjecture based on expectations and extrapolations. This is to an extent an unconscious process, a factor that is taken into account without saying, with an implicit understanding that this imagined audience is amorphous and often implicit. And while it may be a superset of the audience that can be enumerated based on name lists and followers, it may in fact only overlap in a limited way due to various blocking and muting features both IRC and Twitter offer. As boyd and Marwick put it in their analysis of imagined audiences on
Twitter, “nearly all tweets are read by relatively few people—but most Twitterers don’t know which few people. Without knowing the audience, participants imagine it” (2011, p.118).

In some circumstances people may be prompted into articulating these imagined audiences, particularly when confronted with others that are ostensibly members of their audience but do not fit the imagined stereotype. Such practices reveal both the expectations people have of what a platform can do for them and which people will read their messages, and are therefore relevant in this context. One prominent example of this is relatively common on Twitter, where many instances can be found of people explicitly asking specific types of followers to ‘unfollow them’. This may be done in jest (“Unfollow me now if you don’t want to see an unnecessary amount of hair pictures”) but is often also meant quite seriously, especially in more political contexts (“If you are transphobic unfollow me right now I never want to speak to you or get to know you because I already know you’re a horrible person”). This is closely related to the more general practice of ‘subtweeting’, or addressing a tweet at someone without explicitly mentioning them, with the tacit expectation that those the tweet is addressed at will take the hint. In the ‘unfollow me’ variety of this practice, there is an attempt to manage the potential readership for tweets written by an account, weeding out those who do not align with the imagined persona the author is writing for by explicitly demanding that they cease reading.

A related but distinct phenomenon is the ‘don’t @ me’ tweet, tweets in which the author professes a certain opinion, then adds the request to not @ them, i.e. not to reply to their tweet, presumably because they are not interested in contrary opinions, affirming their certainty about their stance. Again this Twitter-specific rhetorical device is employed both in serious conversation (“Don’t care if I’m called homophobic.. Being gay is not natural. You are demon possessed. Don’t @me.”) and in jest (“I don’t like cheddar cheese don’t @me”). But contrary to ‘unfollow me’ tweets, this is not so much an attempt to manage visibility as a way to set the rules for conversation: no talking back is expected or will be accepted. Arguably there is an implicit expectation of an audience insofar that it is expected to potentially contain trolls, or dissenters; but

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72 See e.g. Edwards and Harris, 2016, for a more comprehensive exploration of this phenomenon.

73 See Appendix A for more information on the tweets that were consulted.
there is no explicit expectation here about who can or cannot read it—only about the
actions that audience may take after reading it, and following that a pre-emptive
articulation of what the author thinks of those actions. This is necessitated by the fact
that any audience on Twitter is always at least partially potential; as it is impossible to
accurately assess whether a response can be expected from the people reading a
tweet, or even who those people are exactly, it becomes necessary to set explicit rules
in advance. In other words, it is another example of an attempt to police audiences in
a more general sense, in lieu of software features that would allow this, e.g. by
disabling replies to a tweet or making it visible to a subset of followers only. Such
features are available on other platforms like YouTube or Facebook, on which they
may be used to set very specific per-post (or per-video) rules on who can see or reply
to it. On Twitter this is not possible, and the only thing people can do is ask—or
demand—readers to follow their instructions. In this they attempt to have the
platform align with their expectations and wishes for it.

A relevant question is to what extent such broad audience management practices
are in fact intended as such and to what extent they are merely a roundabout way to
signal a political stance or opinion—using the demands of unfollowing or not replying
as a way to emphasize how strongly one feels about something. As this type of tweet is
not addressed at anyone in particular, it is only rarely possible to verify the actual
intent, and it could be argued that the more overtly political accounts employing this
tactic are simultaneously the least likely to have a significant audience of dissenters, as.accounts will generally be followed mostly by those who are broadly in agreement
with them on political subjects (Hansen and Golbeck, 2011, p.1107). But either way
people on Twitter use these methods to explicitly negotiate their audience on the
platform—regardless of the actual effect of such tweets, or the expected effect, it
reveals how those tweeting have a clear idea of the audience they would like to be
talking to via their tweets, and by making these expectations explicit they are
simultaneously signalling that those who do not fit in are not welcome, and that those
who do fit in are appreciated.

This dynamic is very much a result of Twitter’s visibility configuration and the
constellation of features they offer for filtering certain types of tweets. Besides the
‘unfollow me’ requests, searching Twitter reveals that similar calls such as ‘mute me’
or ‘block me’ are also popular enough to return page upon page of search results. What such tweets have in common is that they very specifically implore readers to use a particular feature (i.e. unfollowing, blocking or muting) out of this set of visibility settings to make them remove themselves from the author’s audience. This pattern can also be used in a more positive sense—given the larger potential audience on Twitter, it can be attractive for people to craft their tweets to invite spreading them beyond the immediate context of their account’s followers. This may be done overtly, such as in a tweet containing a photo of the author’s brother and his prom date asking people to “PLEASE LET MY BROTHER AND HIS DATE GO VIRAL 😍😍😍😍😍”—effectively so, as the tweet would become one of the most retweeted tweets of all time. This explicitly refers to the potential virality of tweets, something obviously closely connected to the large potential audience Twitter affords, and calls upon people to share the tweet, in a reversal of the ‘unfollow me’-style demands that asks people not to engage with a tweet—but both requests follow the same pattern: the audience is unknown and unknowable, and yet we want to police it—so we fling a message into the digital ocean, hoping they will read and heed it.

8.2.1. From lurking and kicking to “don’t @ me”: tactics for audience management

Whereas on Twitter people have thus developed methods of dealing with the large potential audience on the platform this specific type of explicitly giving it instructions is less necessary on IRC, where audiences are more clearly delimited. But IRC has other contexts in which aspects of audience are unknown, which has also prompted idiosyncratic methods of policing an implicit group of people. IRC borrowed the channel-based social structure from earlier platforms like BITNET Relay chat and never made substantial changes to this configuration; but the implications of this structure did change as popularity and access to these platforms developed. A strong example of

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74 The tweet ranked 3d in the top 10 most-retweeted tweets on Favstar, a site that keeps track of how often a tweet has been liked (or, as it was initially called by Twitter, ‘faved’) as of September 2015. As of 2019, following changes to Twitter’s API, Favstar is no longer accessible; see also Appendix A.
such an evolution, is IRC’s complicated relationship with ‘idling’ or ‘lurking’\textsuperscript{75}, i.e. the practice of being present in a channel without contributing.

On IRC, the audience—the group of people who read the ongoing conversation—is primarily limited to a particular channel. There are exceptions to this, as some channels choose to make transcripts of chat within them publicly available or searchable. This is primarily done by channels that in some way serve a public interest, such as channels intended to serve as a support platform for a website or channels used to discuss the development of software. It is difficult to effectively gauge what channels archive chat logs; ircbrowse.net, a service channels may sign up to to make their chat logs available publicly through a centralised interface, does mostly list technology-themed channels. But in the case of more casual chat, conversation is usually not logged or only logged privately (i.e. not to an archive available to a wider audience), and there is thus an implicit expectation that conversation will only be seen by people present in the channel.

But the identities behind the nicknames of those in the channel are not always known, and there may be concerns about eavesdroppers hiding behind nicknames that say little or nothing but are present nonetheless. This seems to have been less of a concern in the early days of IRC; while an Australian IRC developer, proposed to “modify srevers to kick idlers [after] 15 mins” in 1991 (which was met with little enthusiasm), there are few references to lurking or idling in early mailing lists or alt.irc Usenet discussions. But as internet access became more widespread, and access was no longer limited to universities or paid by the minute, it became increasingly common to leave computers connected for longer periods of time, even when not physically present at the keyboard; prompting the creation of channel rules that forbade ‘idling’ for too long. Such rules are generally not part of network-wide policies but instead set by channels themselves; while many have no explicit rules about idling, others may impose a time limit after which silent people are automatically kicked for inactivity. That this is a common practice is evidenced by the many scripts and bots that are

\textsuperscript{75} A ‘lurker’, per the jargon file: “One of the ‘silent majority’ in an electronic forum; one who posts occasionally or not at all but is known to read the group’s postings regularly. This term is not pejorative and indeed is casually used reflexively: ‘Oh, I’m just lurking.’” (2003a)
available online to streamline this process, automatically kicking anyone who has not said anything for a given amount of time, a feature commonly named ‘idlekick’.

What is considered an inappropriate amount of ‘idle time’ varies from channel to channel: on the Snoonet network, for example, the channel #r4r—a place to meet new people—has forbidden “[i]dling for weeks at a time without ever contributing to the channel. Don’t be that creepy person watching all of us” (#R4R Channel Rules, n.d.) while #thenetherlands, a channel serving the Dutch community, has the more strict policy of kicking anyone who is “being inactive for more than 3 days, unless you are a regular visitor”76.” (#thenetherlands huisregels, 2017). On the other hand, #aspergers, a channel for people with Asperger’s Syndrome, explicitly invites visitors to “feel free to idle” when joining, but does ask people to “keep any logs of the channel private, [as] some users may share things in channel that they would prefer not sent to others outside of the channel,” (#aspergers rules, n.d.) showing that there still is a concern about not everyone in the channel acting in good faith, and that there is an effort to limit the potential audience of conversation in the channel to those actively participating in it.

There is, of course, a difference between articulating a specific preference of who you want to be included in an imagined audience—based on their opinion about transgenderism or tolerance for hair-themed photos—and simply limiting it to active participants of the conversation. To be sure, many IRC channels have additional rules besides enforced activity that police discourse within them to some extent, such as banning bigotry or links to illegal content. But this is also a further result of how IRC and Twitter are configured differently when it comes to visibility. IRC channels are themed to begin with, through their name, which means most people in it will at least have an idea of the theme that is meant to be discussed. This works both ways; it may provide a hint for what is considered acceptable conversation but, as seen when LGBT-themed channels were harassed in the early 1990s, may also serve as a banner for those seeking to troll or harass those they disagree with. But in that case, it is often unambiguous that the trolls are at odds with the general tone of the channel, and they are easily removed from the conversation by a moderator, thus creating ‘micro-platforms’ where specific rules are set and enforced. Again, Twitter is far more

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76 Transl. from Dutch: “inactiviteit van meer dan 3 dagen, tenzij je een bekende bent.”
ambiguous in this regard; and while both platforms show that people set their own policies in an attempt to police their audience, there is thus a clear difference in where the focus (and potential effectiveness) of this practice lies.

Generally speaking there will at least be a mild consensus about what is appropriate to talk about in a given channel on IRC, supported by a relatively straightforward method of removing more overtly hostile members of the audience; as seen, this is more ambiguous on Twitter. Furthermore, on Twitter the imagined audience is far more individual than on IRC, as on the latter platform it will always be largely congruent with the people in a channel, rather than a more nebulous category of people who may potentially read a tweet, which is determined by the author’s followers, the followers of these followers, et cetera. On the other hand, as there is no way to look up people’s personas as on Twitter, on IRC one mainly constructs an identity through conversation; thus the emphasis channels often put on active participation can be construed as a way to make people say enough about themselves that adequate measure of them may be taken. People on IRC do leave traces that may be used to construct a profile of them, via archived quotes, personal information stored in a bot’s database, or nicknames that may be cross-referenced; but there is no sense of a profile crafted especially for the platform as on Twitter, and there is no built-in facility to view all of these traces together in one interface like Twitter’s timeline. But while there are differences in focus, on both platforms people have developed strategies to cope with and police the unknown or unknowable aspects of their audience.

8.2.2. Tensions and visibilities: how audience management develops into features

The above reflections on both platforms are valid as of 2017, but they are the result of continuous development since the platforms were first created. While the basic rules concerning visibility of conversation have not changed much on either IRC or Twitter over the years, the tools and rules for managing potential audiences very much have, e.g. the addition of channel moderators on IRC and muting/blocking tools on Twitter. It is here that links to wider trends in internet usage, shifts in expectations, and changing attitudes towards the relation between people using both platforms can be found. IRC’s per-channel moderators were only introduced in the early 1990s, and
originally moderation of the (then still unified) network was taken care of by a group of network-wide administrators (‘ircops’, for ‘IRC operators’). The shift from this centralized mode of administration to a more decentralized per-channel setup reflects not only the increasing popularity of IRC—which made it unfeasible for a limited set of operators to police all conversation on the platform—but also a dissatisfaction with what was sometimes perceived as an overly tyrannical or whimsical style of moderation, where ‘K-lines’ (forced disconnections) were handed out wantonly and (perceived) abuse sometimes went unpunished. Discussions on alt.irc about k-lines complain that “lots of k-lines are very arbitrary” and a large thread from 1992 illustratively titled “fascism and IRC” is one of multiple containing heated discussions about getting kicked off networks for reasons unclear to the one being kicked off. This even resulted in a manifesto proposing the ARN (“Alternate Research Network”) which, contrary to IRC, would have a “non-authoritarian maintenance staff”.

While discussions about abuses of power by those who had it would never really die down on IRC, making it possible for people to moderate their own channel meant that policies could be tailored to the wishes of the people in it, allowing more specific selections of audience and conduct than was possible when any policy had to be enforced by network-wide operators.

Twitter’s development, while clearly distinct from IRC due to its fundamentally different roots, does offer some parallels. Like IRC, it originally started with very few tools for moderating and managing audiences: people could be followed and unfollowed, and that was the full range of features. Theoretically, Twitter itself could be petitioned to remove particularly offensive content, but this would only be done when it violated Twitter’s own terms of use, and those who had stricter policies for whom they wanted to be able to see their tweets had no options to enforce those. One of the first features that was added to give people more control in this regard, within a few months of the platforms’ release, was to enable marking a Twitter profile as ‘private’, meaning only approved followers would be able to see tweets. But while this gave people very tight control over who could see their tweets—making ‘unfollow me’-type tweets largely unnecessary if the goal was indeed to get rid of particular followers—a private profile also precluded many of the more popular ways in which

77 The alternate meaning of ‘IRC cops’ seems to have been accidental, though fitting.
Twitter was used. Private tweets had no potential to become viral as they could not be retweeted, and there was no way to reach non-followers such as customer service accounts, famous people soliciting fan questions, or hashtag-based discussions. While this may have been acceptable to some it was a sizeable disadvantage for those only seeking more control over who could see their tweets while continuing their more typical Twitter usage. Eventually, in 2009 Twitter made it possible to block specific accounts, ensuring that these would never see one’s tweets and would not be able to talk to them. This gives people a modicum of control over their audience, but largely it remains both imaginary and potential; it is never possible to pre-emptively block all disagreeable accounts, and there are no features that allow blocking groups of accounts or all accounts fitting certain criteria, such as on IRC where one may choose to ban, for example, all connections originating in a specific country from a channel. While IRC and Twitter are similar in that they have incrementally added features that give tighter control over who can and cannot be part of a conversation, Twitter’s versions of these are less powerful and offer less options than IRC’s.

There is thus a tension between on the one hand Twitter’s open, account-based nature and on the other hand the desire for more precise control over who sees one’s tweets that exists among some people that use the platform. This contrast is illustrated by IRC on which no such tension exists and which has few problems with managing potential audiences; a small set of features is enough to police access to channels as strictly as warranted by the channel’s self-set rules. Twitter has at its core always been based on the idea of sharing a personal status with ‘the world’—i.e. anyone else using Twitter—and any attempt at using the platform and limiting the audience to a subset of the world will be at odds with this notion.

This echoes the similar tension that Twitter had trouble with when trying to collect tweets that were replies to each other into ‘conversations’, discussed in more detail in chapter four. In both cases there is a difference between what people want from Twitter and what Twitter wants to offer—one that can be reconciled to an extent by adding new modes of visibility and organization to the platform, but never so that the difference will be completely eliminated. But whereas Twitter has arguably never been willing to compromise its core design to address such differences, this is not the case for other platforms. Facebook, for example, has compartmentalized itself to an
extent—its instant messenger is separate from its timeline, and conversations are hierarchically linked to a specific post and always shown within the context of that post. On Facebook, audiences may be imaginary or potential in some contexts—such as when posting on someone else’s page or making something available for “friends of friends”, which can be a very large amount of people when one has a lot of friends themselves. But in other cases it is perfectly clear who will be able to see a message, such as when posting in a private Group or using the platform’s instant messenger service. This is a shift from Facebook’s initial configuration, where its timeline was chronological like Twitter’s, and replying worked much the same—by posting a new message on the recipient’s ‘wall’. This was later changed so replies would be linked to the post they were replies to; and Facebook’s wall is no longer chronological, in its default view. Twitter however has not seen such a shift in how its messages are organised.

Instead, the platform has always relied on the tweet as the principal form of content that is disseminated through it; a timeline consists of tweets, and all tweets are equally important and equally visible. While the platform has experimented with various forms of ‘relevance’-based sorting of timelines, they are mostly displayed in roughly chronological order. Anything that deviates from this ‘all tweets are created equal’ model is potentially problematic, and necessitates negotiations like the ‘please unfollow me’ tweet, ‘don’t @ me’ or subtweeting. Much of this also applies to IRC, on which conversation is invariably displayed as a chronological stream of lines of plain text. But by dividing activity over multiple channels, each with their own rules and audience, the platform can avoid the issues Twitter faces as a result of collapsing all activity into one uniform context, and as a result channels are free to set and enforce their own policies. But weaker strategies like ‘unfollow me now’ or ‘don’t @ me’ are likely to remain necessary on Twitter unless it is willing to compromise on some of its fundamental characteristics.
8.3. Audiences, and the importance of social affordances

In summary, this is perhaps one of the areas in which Twitter and IRC are furthest apart; audiences, and how these are articulated. There are several binary oppositions here; open versus closed, potential versus concrete, public profiles versus emergent traces. Reasons for Twitter and IRC’s respective characteristics when it comes to articulating audiences are not hard to find; on Twitter, they can be traced back to Twitter’s core concept of a public list of statuses combined with a reticence to compromise on this core concept even if some people on the platform find it problematic. On IRC, much of the channel-based structure can be traced back to its forebear BITNET Relay Chat, with a smattering of features (e.g. channel operators) that were added later in response to difficulties in keeping the peace. The lack of persistent personas, et cetera, can again be attributed to a mismatch between such a feature and the platform’s fundamental design.

This invites the question to what extent this is a useful comparison, as both platforms simply have different goals here, and their respective configurations are ostensibly suitable to that goal, and not that of the other platform. But even a cursory look through other major online social platforms reveals that there are several that have successfully combined Twitter’s public, unitary context with a more closed and well-defined mode of communication like IRC’s. Both types of social context appear on Facebook, as well as a number of hybrid forms, in its offerings of features such as Groups, Messenger, Public Pages and the Personal Timeline. On SnapChat, one can be very precise in configuring the audience for their posts, from the whole world to followers only to a more selective subset of that group. Reddit, for the longest time a place of disposable IRC-like identities, has in early 2017 started offering people the option to customize a personal homepage to promote a more well-defined profile. There is thus not so much a dichotomy here, between public and private or visible and invisible, but rather a spectrum of configurations on which IRC and Twitter occupy places near the extremes. An analysis of them can therefore reveal the role of choices with regards to visibility, social structure, et cetera in determining how people envision what the platform can do for them and what kind of people they can reach through it.
Contrasting these ‘imaginaries’ reveals that the relevance of the platform’s features and affordances for these expectations is very much a sliding scale. The general vision of what a platform can do slowly gives way to a more specific idea of how it can be used and what it is useful for once someone becomes more familiar with it, through actively posting content on it. On the one hand, a platform’s specific design has little direct relevance to the more general expectations people have of it, that is the ideas they have about the role it can play in discourse. For both IRC and Twitter this is a general expectation of democratisation and meeting new and interesting people—something shared with most other communication technologies and galvanised by early examples that conform to this expectation—reactively adjusted by general trends in how people subsequently use the platform. While the latter factor is obviously influenced by a platform’s features and affordances, as detailed in the previous chapters, this influence is on the whole diffuse and indirect, and often has only a vague relation to the platform’s design or its creators’ intentions. Although people may attempt to influence this general image of a platform through demands for new features or policies, subsequent changes the platforms’ author makes only incrementally affect these expectations at best, and any change is slow, indirect and difficult to attribute to a specific agent of change.

On the other hand, zooming in at the more specific ideas people actively using the platforms may have of who will read one’s content, the importance of a platform’s features and affordances but also the agency of the people holding these expectations becomes more apparent. This is, again, something of a gradient rather than two epistemological modes; people who only casually use platforms are less likely to have formed a coherent idea of what kind of audience reads specific tweets. But among those using the platform more actively, some have developed strategies to cope with the configuration of a platform with regard to visibility, explicitly trying to shape their audience on Twitter through demands and articulations of what they want their readers to do where no settings exist to manage this through the platform’s software. The absence of such strategies on IRC is clearly an effect of the platform’s more precise methods through which audience is articulated and controlled; the fact that there is an unambiguous list of people who may read one’s messages negates the need for more implicit negotiations of one’s audience. But other self-imposed policies, such as the various channels’ rules for what amount of lurking is considered acceptable, indicate
that on this platform too people devise their own strategies to negotiate the lack of the platform’s own features to make their audience conform to the expectation they have of it.

Thus, in the case of one’s imagined audience, there is a clear attempt by people to make the imagined concrete, and whereas in the more general scope people have little agency to do so, in this more specific instance they negotiate the platform’s features to set their own policies and rules in an attempt to make this happen. Even if this is a more proactive attitude than in the case of the general expectations of a platform, it is not necessarily more effective; this depends on the people one is dealing with and the effort one is willing to devote to e.g. moderating an IRC channel or blocking followers on Twitter. But there is more room for people to make their expectations into reality in this more limited scope. The extent to which people have agency here is very much dependent on the leeway the platform gives them in this regard, which is where the platform’s affordances come to the forefront. In the end, then, the importance of affordances to people’s idea of what the platform can do for them is limited and indirect, but significant nonetheless.
9. Conclusion: Understanding affordances and what we do on online social platforms

In this thesis I have analysed how the materiality of a platform is developed and plays a role in how people use it to express themselves together. It has long been recognized that affordances play a role in online expression; similarly, it is clear that there is a formative relation between a platform’s affordances and its context and genealogy. I have attempted to bring those two notions together, exploring the process from inception of a platform to its use (and abuse) by people to express themselves, at the same time exploring how the same affordances are also used for more esoteric kinds of expression, such as in the case of Hamnet or various kinds of chat bots. I have done this through a platform study, where I investigate the interplay of a platform’s materiality and what people use it for through a comparative analysis of particularly illustrative case studies of the platforms’ use.

Through my analysis, it has become clear that even in the presence of obvious differences between platforms—in this case, Twitter and IRC—there are remarkable similarities in the type of interaction they afford on a general level. While there are clear differences too, this thus suggests that the role of a platform’s materiality is significant but ultimately limited, and that in many cases people will try and often succeed to reappropriate a platform’s features and affordances for unforeseen purposes.

I began this thesis by outlining the relevance of the platform studies method as a lens through which study attitudes and appropriations of social platforms. I emphasized particularly the materiality of a platform, and the socio-technical context that gives rise to that materiality. I have followed this thread throughout the later chapters; each time considering not just the way a platform is used, but more importantly why it was used that way, considering the configuration of that platform. The case studies I present are therefore not only discussions of the various ways in which both Twitter and IRC are used, but also provide context about the features that enable these types of use, and—crucially—why these features are present.
Following that, two things are worth noting. In each case, there is a clear link between what happens on a platform, i.e. the expression; the features through which this expression is performed; and the reasons for those features to exist in the way they do. By foregrounding this latter aspect, I emphasize the link between a platform’s techno-political background and the expressions performed on it, which may at first glance seem far removed from that background.

Some nuance however is required here. There are, to be sure, clear differences between platforms in terms of what kind of communities or genres of expression emerge. These differences can then for a large part be explained by the particular features and affordances of the respective platforms; in terms of community formation for example the affordances of both platforms play a clear role in making this more successful on IRC than on Twitter. On the other hand there are a number of similarities between platforms in terms of genres of expression that would perhaps not be expected given the platforms’ differences, such as the success of citizen journalism and organised comedy. This also goes for the imaginaries about these platforms; following an initial ‘honeymoon’ period there is an adjustment towards the mean, where a few foundational, inspiring examples compete with later, more nuanced (or outright abusive) appropriations of the platform.

9.1. A summary

As I outlined in chapter three, a ‘platform’ is here to be taken as a computationally grounded system in which, following van Dijck, things are allowed to happen (and consequently, some things are not allowed to happen). This emphasizes the role of a platform’s features and affordances in defining it; an affordance is seen as a process, in which someone performs an action under the invisible but always present gently guiding hand of the software’s interface and context, which thus has an essential role in defining what is allowed to happen. I proposed that taking this notion to its logical conclusion, affordances are at work on multiple levels of abstraction; in the software, influencing what people do with it, but also in the underlying platform, influencing what is possible within the software, and on a more metaphysical level, in setting the
stage during a platform’s development, suggesting paradigms and standard practices that are subsequently interwoven with the fabric of the platform’s interfaces.

In chapters four and five, I have analysed the development of Twitter and IRC historically, following the platform studies framework. By concentrating on specific features, I could reconstruct (parts of) the development of these platforms in detail; revealing the impact of contextual factors such as programming paradigms, competing platforms, the preferences of those using it, et cetera. I have shown how these have a real and immediate effect: Twitter’s hashtag shows clear influences of microformats, folksonomies, its predecessors IRC and Jaiku, and various requests for its general functionality that had currency at the time. These forces had varying degrees of impact on the concrete tagging syntax that the hashtag would become, but the traces are clear enough. Likewise, I have shown how IRC’s predecessor, the BITNET Relay, had an architectural and social impact on IRC, even if the constraints that originally informed BITNET Relay’s design choices were no longer relevant on IRC. Together these case studies reveal how the individual features and affordances of an online social platform, and to an extent also its more general architecture, are the result of a partly haphazard amalgamation of forces that may not be of direct consequence but have the power to effect change via intermediary platforms that are used as an inspiration for new ones. Such characteristics defined by external constraints further continue to be present years later when those other platforms have been all but forgotten.

In chapter six and seven, I turned from the features and software of the platforms to the things people do with that software. A nuanced variety of expression emerged. I have shown that while there are clear differences between platforms in terms of the relative popularity of various genres of expression, other genres will exist on any platform. Even if a platform would seem manifestly unsuitable for a genre—such as seen in the not wholly successful attempts at transposing theatre to Twitter—it still exists, and the only exception seems to be particularly intimate genres such as cybersex. On the other hand, the precise nuances of a genre—ranging from comedy to war reports—do show clear differences that can be linked to the affordances that are specific to a platform. I therefore conclude that it is especially in the particularities of a genre’s manifestation where the techno-political context of a platform makes a
difference, to a greater extent than they do in the overall ‘landscape of expression’ that may be found on a platform.

In chapter eight finally, I took a more general perspective and explored not the platforms themselves, but their imaginaries. I discussed how platforms follow the same general pattern of an initial period of enthusiastic utopianism, before settling into a more nuanced imaginary of a platform in which a number of influential, early, positive examples are balanced by a more pessimistic realisation that the platform can also be used as a space of abuse and harassment. Additionally, I discussed how a similar pattern is visible if the leap is made from the abstract to the concrete; while initially people on both IRC and Twitter were enthusiastic about its capacity for bringing people together, later both platforms saw the development of strategies to control and police this audience, even if Twitter had far less capacity for such policing than IRC. Again, this practice is similar in principle and on a macro-scale, but its particular operationalization is different and very much defined by the specific features and affordances of a platform.

9.2. **Key findings**

I thus propose that a platform’s materiality certainly plays a key role in affording certain types of expression, people are remarkably proficient in finding space within a platform’s constraints to express themselves like they want to within these boundaries, even if the platform ostensibly is not at all set up to afford particular modes of expression. Examples of many genres are found on both IRC and Twitter, even if one is seemingly more suitable than the other; from esoteric examples such as theatre performances to comedy and news coverage, both Twitter and IRC have been used. This general pattern is not only visible in the types of expression that can be found on a platform but also in the development process; while both platforms had a relatively specific purpose in mind when they were first developed, people were quick to request and, if that was not effective, innovate features that would afford a wide variety of discourse. In absence of Twitter’s lack of facilities for conversations between people or categorizing content, people came up with their own conventions to do so,
only later finding support from within Twitter for such practices. While on IRC conversation and categorisation was more or less built into the core of the platform, things such as user profiles or persistent conversation history were absent. Again, people found their own ways of approximating such features, building bots that later became a de facto standard feature of the platform. And sometimes a lack of features and the ability to add these is addressed discursively, as seen in chapter 7 where I discuss the phrase “don’t @ me” as an example of this conscious engaging with a platform’s specificities, in that case Twitter’s ‘always-on’ nature that is not always desirable. As a great example of people actively engaging with such specificities, it forms part of the title of this thesis.

This has potential implications for the understanding of a platform as a space for ‘computational expression’. As discussed in chapter 4, this tenet of platform studies implies a strong link between the platform as a computational system that serves as a grounding for the expression generated through it. Given the case studies in this thesis, the understanding of this link can be filled in more concretely. Whereas Bogost and Montfort attributed the variety of content produced for the Atari VCS console chiefly to “the flexibility of [its] architecture” (2009a, p.138), after this comparative analysis of two similar-yet-dissimilar platforms one should perhaps add to this the flexibility of the people working within that architecture. It is clear that they are, indeed, working within an architecture, and that this architecture has implications for what happens within it; but the implication that the flexibility shown therein is owed to the flexibility of an architecture that “invites new innovations” (ibid.) attributes a large amount of agency to that platform in this and leaves comparatively little to those doing the innovation. In practice, on two platforms with relatively divergent architecture and a number of large differences in affordances people do find ways to, after a fashion, innovate similar modes of expression.

This is not to say that computational expression is platform-agnostic. It is not the case that all platforms eventually converge on a standard blueprint. Clearly there are differences, such as the degree to which intimate conversations are afforded, that depend on some fundamental feature of the platform and cannot be overcome by the ingenuity of those using it. But nevertheless the 'vision' behind a platform and the affordances resulting from it have only limited effect; expressivity is not so easily
confined. This was already suggested in this thesis’ introduction—in perhaps one of the more radical shifts from vision to practice, Tumblr, the online scrapbook, became a popular place to share pornography (until this was outright banned by the platform’s owners).

9.2.1 Visibility as a factor

But obviously there are differences between platforms. If not in the variety of expression, there is certainly a difference in both execution and focus. Comedy has become a wildly popular genre on Twitter, with established sub-genres and encyclopaedias cataloguing these. While there is little reason to believe that people on IRC have less humour than those on Twitter, there is far less of a focus on jokery on that platform, despite the existence of crowdsourced comedy infrastructure like QDB. Here affordances do play a role, as Twitter has a number of features that make it easy to spread jokes or funny content, and perhaps the format of the Tweet—which, for example, may include a picture or video as illustration and eye catcher—lends itself to jokes especially well. But based on the case studies discussed in the previous chapters, the most important factor here is perhaps visibility. A joke on Twitter can be seen, and consequently spread, by the whole world; on IRC it is confined to the channel it is made in.

Based on the case studies presented in this thesis visibility then is, arguably, a factor that explains many of the differences between platforms. IRC weddings work because they can mimic the intimacy of an offline, invite-only real-life ceremony; Twitter on the other hand has no way to keep the riff raff out. Twitter has become an unusual but powerful source of news and citizen journalism, with any scrap of information posted on it accessible to the whole world and quickly embedded on news sites; IRC occupied a similar niche for a brief time in the early 1990s, but relied on chat logs archived elsewhere—on the public world wide web or FTP servers—to actually disseminate any news found through the platform, consequently being less successful in this area once alternatives were developed. Communities are tight and strong on IRC, where they can claim their own space, set their own rules, and decide who gets in and who doesn’t; on Twitter they are looser, less intimate, and less concerned with personal matters,
always aware of the fact that there are potentially 200 million people listening in on their conversation.

The importance of visibility is suggested additionally by the dynamics of other platforms, such as Facebook. While not the focus of this thesis, it is an interesting counterpart to the platforms studied here: Facebook could be said to offer the full gamut of visibility options through its various offerings. Messenger allows for one-on-one or group conversations, Groups and Pages offer a space for a select group to post in private but may also be opened up to everyone else; one's timeline is read by a self-selected group of friends; and finally there are many sites incorporating Facebook's technology to display public discussions, each contribution clearly linked to one's Facebook account. Groups have been shown to support strong communities, with intimate relations; public pages and discussions are less personal but display the same intensity as, for example, GamerGate discussions on Twitter; while Messenger has been cited as a place where lovers meet\(^78\). Perhaps the strength of Facebook, among other things, is offering all of these modes of conversation, rather than limiting itself to one of them, like Twitter and IRC do. But clearly each mode has its place, and is appreciated by people who find them suitable to a subset of their communication needs.

IRC offers some variety in this sense—one can join large channels with lots of people or small channels with a trusted group of friends. But crucially the channel is still the dominant mode of organisation—there is no (semi-)globally public alternative. Twitter on the other hand offers only that globally public context, and has no real variety within that system—hashtags and conversations offer a way of grouping messages but those messages are still essentially visible to everyone. In fact, especially on Twitter this relative one-sidedness is clearly at odds with some of the things people do on the platform, or things the platform wants to support. Conversations, being an exchange of messages between a limited number of people, are an awkward fit with the chronological, global timeline, and Twitter has tried various ways of displaying them without ever arriving at something completely satisfactory. Whereas Facebook has split conversations off into the semi-separate Messenger platform and to self-

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\(^78\) See van Ouytsel, et al., 2016 for a further discussion of various social media platforms are used in romantic relationships.
contained replies to posts, Twitter’s adherence to its initial vision of global visibility is continuously in tension with the conversational purposes people have appropriated the platform for.

9.2.2. Technology affordances

As seen, people are not necessarily impressed by a platform’s ideas about what they should do with it, and they will happily ignore it to do things they find interesting. There is a choice for the platform’s developers at that point: acquiesce to the apparent needs of those using their platform or hold on to their own ideas. IRC was open to user suggestions, and anyway supported customization on a relatively fundamental level, which is why the chat platform has a feature like the /me command, a lone holdover from the MUDs that were ubiquitous at the time. Still, both on IRC and Twitter people made suggestions and demands that were ignored by the platform—sometimes even when there was a considerable amount of support for these suggestions, such as in the case of Tweet grouping or nominating moderators through voting on IRC.

These changes to the seems to have often been of limited consequence; people find their own ways of doing things, inventing hashtags and utilising them for a variety of purposes, and creating bots in lieu of native IRC features. While this obviously requires more effort, such practices are at the same time popular enough that it can hardly be said that the platform does not afford them. In a way, through offering the possibility for people to develop features such as hashtags and chat bots themselves, they could in fact be said to afford the things these innovations enable—e.g. tweet categorization, or voting on moderators—quite well; not because they were built with these in mind, but because on a more general level they provide space for that kind of invention. These innovations and appropriations in some cases even go on to have a life beyond the immediate context of their platform; hashtags are ubiquitous now, and quotes from bash.org—the IRC comedy archive—still routinely pop up on forums like Reddit⁷⁹.

As discussed in chapter 3, technology affordances are “the material features of technology [which] may have many effects on the social conventions that surround

⁷⁹ A particularly prolific quote, which is also the highest-rated entry on QDB, is an exchange in which someone is tricked into typing out his password in plain text; a web search for the password returns many sites on which ‘hunter2’ (the password in question) is used as a stock answer in discussions about passwords and privacy. A search for the password on Reddit returns over 36000 posts as of July 2019.
them” (Gaver, 1996, p. 118). With Gaver’s cautious phrasing (“may have many effects”) in mind it stands to reason that within a platform’s features and affordances many things are possible, and affordances are far from deterministic. But what is perhaps surprising is how far-reaching this effect is. Even if a platform operationalises its vision, explicitly implementing features that support that vision (such as user modes on IRC, or @replies and retweets on Twitter) or rejecting those that are at odds with it (such as MUD-like commands on IRC, the original hashtags and groups on Twitter), this certainly has consequences for a platform’s interface and software but nevertheless leaves plenty of room for people to operationalise their own vision for the platform, and take ownership of and build their own features with those (such as bots or theatre on IRC, and “don’t @ me”-style directives and other syntactical innovations on Twitter) which they do often enough that a case could be made for an investigation of a platforms’ immediate affordances to always additionally require a thorough exploration of what potential exists within those confines; based on the two platforms investigated here, that potential seems to be generally quite broad.

One of my goals was to find out how a platform’s underlying technology shapes that platform’s technology affordances for expression. The conclusion here then is two-sided. On the one hand, clear traces of their respective underlying technologies can be found in both IRC and Twitter’s affordances; IRC’s limited set of features and command-based interface recalls the common Unix software design paradigm of the time, and Twitter’s status sharing was clearly influenced by older platforms such as LiveJournal and Jaiku. IRC additionally is defined by the text-only, low-bandwidth nature of the internet at the time it was created, while Twitter’s sms-based beginnings played a role in the adoption of hashtags and its emphasis on short messages. These are direct traces of technology defining a platform’s affordances. An important note here however is that many of these affordances are not found in the software’s interface or features that determine whether one can for example attach photos to one’s post. Rather, the important differences of the platforms in terms of affordances of the technology are found in the platforms’ respective social architecture and the visibility of one’s posting that emerges from it; who can see a line or post, and how interaction is organised in terms of groupings; as (semi-)private channels on IRC, or more publicly on Twitter with a possible ‘backchannel’ of hashtag-based posting.
And importantly many of these affordances are not only fundamental to how the platform is used, but also stem from the early days of the platform and sometimes even before that. Twitter’s emphasis on status updates was preceded by Finger almost three decades earlier; BITNET Relay implemented a channel-based network on BITNET, which was far more rudimentary than the later Internet. Platforms liberally draw inspiration from what already exists, copying or repurposing features and ideas, as I discuss in chapters 2 and 3. Many of such features – Twitter’s statuses and hashtags, IRC’s channels and its action command – have clear counterparts on related, earlier platforms. So while a platform is certainly shaped by the technology it is built on, ‘technology’ here does not only encompass the nuts and bolts, the infrastructure—but more importantly the existing technological paradigms and artefacts that serves as an inspiration and example for the development of new ones, and have the power to institute social architecture and conventions within further modes of use may be innovated.

9.2.3. (Historical) platform studies, conceptualising affordances, and micro-platforms

Throughout this thesis, I have often employed a historical perspective, referring to artefacts from the earlier periods of both IRC and Twitter to make clearer the attitudes of people who were involved in their foundational processes. The internet is a vast if sometimes fragmentary archive that contains a wealth of often untapped information that can shed light on the development of platforms. I thus emphasize the value of the past in analysing the present in the context of new media studies. Sources such as mailing lists, blog posts, news group archives, net zines, tweets and IRC logs have the capacity to not only show us what people do on online platforms but also why they did it, what they thought of the platforms, and what forces were at work. Though academic scepticism is necessary, in many cases these are reflective accounts that warrant our attention as artefacts that are genuinely valuable in a platform study.

I also want to highlight the importance of the ‘social affordances’ of platforms in influencing the expression and sociality found on there. My focus in this thesis has not been the particularities of a platform’s interface, where one often looks for affordances, but rather the modes of interacting and making oneself or one’s content visible that are possible within that platform. As I discussed in chapter 7, the power of
Twitter retweets is not to be found in the retweet button, but in the way Twitter shows retweeted content to a larger group of people than would have initially seen it. Another Twitter feature that would have allowed people a means through which to ‘boost’ the visibility of a tweet would have similar power. Likewise, the performative power of IRC is not in the ‘/me’ command but in the full set of IRC commands and features that together offer a particularly wide array of ways to display oneself.

I have further argued that people sometimes create ‘micro-platforms’ within both Twitter and IRC; platforms within platforms, over which they hold some kind of (sometimes imaginary) control and for which they attempt to set rules with regards to expression. While these are always created within the confines of a platform like Twitter or IRC, there can be departures from the general modes of conduct within such micro-platforms, and these should be taken into account when studying expression online. IRC channels may have radically divergent rule sets which affect how people conduct themselves, e.g. depending on how likely they are to be kicked off a channel. Twitter offers fewer tools to enforce rules but nevertheless has developed tweet-based conventions through which people attempt to outline the type of conduct that is expected within a person’s timeline, a conversation, or even a loosely defined genre such as ‘Weird Twitter’. In chapters 7 and 8 I have highlighted some of these spaces and how they are organised, which is then an important addition to a platform study of this kind.

9.3. Future research: platform studies and studies of platforms

This thesis was inevitably limited in scope; while the choice for Twitter and IRC as platforms to study was made to provide an optimal balance of similarities and dissimilarities, a selection of two platforms cannot capture the full breadth of qualities that platforms past and present exhibit. Follow-up research would therefore be needed to see to what extent the factors distinguished as playing a role in online sociality in a platform context hold up in a broader context. Particularly interesting here is Discord, a platform that combines much of IRC’s functionality with a focus on video game players and an incorporation of the more visual types of content Twitter
affords. Founded in 2015, it was initially seen as a modernized alternative to IRC, and adopted by online communities; its popularity among progressive and queer communities was highlighted in media (e.g. Winkie, 2017, in Rolling Stone). But it has also claimed a place in later political events, being a rallying ground for alt-right United States nationalists in conjunction with race riots (Alexander, 2017, on Polygon). This already touches on some of the findings of this study, such as a platform being appropriated for unforeseen goals and an initial popularity that is offset by less savoury appropriations. An analysis of the platform along the lines of this thesis’ framework could shed further light on the dynamics that enable such appropriations, making Discord an apparently suitable platform, and perhaps offer methods of avoiding them.

Furthermore, I suggest that it would be worth further exploring the notion of digital platforms as a general phenomenon, with particular attention to the fact that the concept is operationalized differently within video game studies and social media studies. There is a rapidly growing body of work (which now includes this thesis) that combines the approach of Bogost and Montfort’s platform studies with an interest in platforms other than video game consoles. I have stayed relatively close to Bogost and Montfort’s own understanding of what a platform is, with some help from van Dijck and Gillespie to transpose the platform studies’ approach to the online social platform perspective; others take inspiration elsewhere. A useful next step would be one that collects and perhaps works towards unifying the various notions of ‘platforms’ here. Platform studies as an approach has clearly transcended video games, and revisiting the foundations of the method, setting it up for a more general approach would help future research that uses the method for other types of platforms.

Online social platforms have become essential building blocks of society since they were first created—almost by accident—in the 1980s. Their transformative power is not so much in their technology or software itself, but in the social architecture that technology affords. These architectures afford a dazzling array of expression, and people continuously reconfigure platforms to allow them to express themselves just as they like. In this thesis I have studied these processes, their dynamics and the forces that drive them. It has become clear that people have considerably agency in this, and are inventive and creative in bending a platform’s features to their needs, subverting
or twisting the platform creator’s intentions in surprising directions. But this does not mean that the platform itself has no impact on what happens on it; it provides the framework within which said subversion and configuration can happen. Important events and developments are taking place inside this context: from politics and journalism to comedy and theatre. This thesis has mapped some of that space; may the rest follow.
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Appendix A – Data sources

The following data sources were consulted for this thesis, and are the source for references to mailing list discussions, Usenet discussions, tweets, et cetera, in the earlier chapters of this thesis. Note that not all data here is directly referred to in the text of this thesis.

IRC

IRC data comprises a variety of chat logs, mailing list archives, newsgroup archives, from various sources and of varying completeness, as tabulated below.

Chat logs

<table>
<thead>
<tr>
<th>Topic/description</th>
<th>Size</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulf War coverage, January–March 1991.</td>
<td>39 log files, varying in size from 2.6KB (10 lines of chat) to 99KB (1092 lines).</td>
<td>LogServ, courtesy of Armin Gruner, archived by ibiblio.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.ibiblio.org/pub/academic/communications/logs/">http://www.ibiblio.org/pub/academic/communications/logs/</a></td>
</tr>
<tr>
<td>ICB Wedding logs, August 1991.</td>
<td>Two log files, totaling approximately 750 lines of chat.</td>
<td>‘Nora’, archived by ibiblio, one log notes that Nora “may do some editing on the way”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.ibiblio.org/pub/academic/communications/logs/">http://www.ibiblio.org/pub/academic/communications/logs/</a></td>
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<td><a href="http://www.ibiblio.org/pub/academic/communications/logs/">http://www.ibiblio.org/pub/academic/communications/logs/</a></td>
</tr>
<tr>
<td>Discussions around the Oklahoma City Bombing, April 1995.</td>
<td>Three log files, approximately 8000 lines of chat.</td>
<td>Unknown origin (ibiblio notes that “these were taken from</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.ibiblio.org/pub/academic/communications/logs/">http://www.ibiblio.org/pub/academic/communications/logs/</a></td>
</tr>
</tbody>
</table>
ftp.procyon.com”, which is no longer accessible), archived by ibiblio.

http://www.ibiblio.org/pub/academic/communications/logs/

‘The Hamnet Players’ IRC theatre performances. Three ‘productions’ (Hamnet, PCBeth and An irc Channel Named #desire) of approximately 1000 lines each. The Hamnet Players’ website.

http://www.marmot.org.uk/hamnet/

bash.org The database contains approximately 21,000 quotes. Bash.org or ‘QDB’, crowd-sources quote aggregation online since 1999.

http://bash.org

Usenet discussions and mailing lists

<table>
<thead>
<tr>
<th>Topic/description</th>
<th>Size</th>
<th>Source</th>
</tr>
</thead>
</table>
| Archives of alt.irc, 1992-today | Approximately 115,000 messages. Keyword searches:  
- FAQ: 4090 posts  
- MUDs: 1231 posts  
- “is now available” OR changelog: 44 posts  
- BITNET: 878 posts | Usenet Historical Collection, archived on The Internet Archive. Origins unknown, but most likely this is a scrape of Google News, as Google-specific headers appear in the message data. |
| UTZOO Usenet Archive, 1988-1992 | Approximately 5000 posts in the two million-post archive reference IRC, matching the \birc\b or \binternet relay\b regular expressions. A further 29 posts discuss BITNET relay chat, matching \bbitnet relay\b. | Henry Spencer, University of Texas; archived by The Internet Archive. |

https://archive.org/details/usenet-alt
IRC mailing list archives, primarily comprising the *operator* (operator mailing list) archives.  

1520 messages in the main *operator* archive, assorted other artefacts such as changelogs, and a small number of files containing small numbers (1-30) of *operator* messages.  

Unknown origin, archived by ibiblio.

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## BITNET

<table>
<thead>
<tr>
<th>Topic/description</th>
<th>Size</th>
<th>Source</th>
</tr>
</thead>
</table>


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## Twitter

Tweets consulted during this thesis’ research were mostly retrieved via either *Favstar* (see below) or Twitter’s own search function. Twitter’s search function does not provide the number of results for a query; if a substantial amount of tweets is returned, it is not possible to verify the total amount of matches for the search query.

- Overall most-liked tweets, acquired via *Favstar*. This site ranked scraped tweets by likes and retweets. Unfortunately, Favstar closed in June 2018, before this thesis was completed.
- Keyword searches
Keyword search, “don’t @ me” and “unfollow me now”, retrieved 28 October 2017. First 500 results were consulted, but more were available at the time.

Keyword search, #EndFathersDay, retrieved 7 November 2017. First 500 results were consulted, but more were available at the time.

  - @agentlebrees
  - @aRealLiveGhost
  - @brendlewhat
  - @bugbucket
  - @c9_joseph
  - @cheesegod69
  - @cool_pond
  - @dogboner
  - @dril
  - @fart
  - @fat
  - @hell_homer
  - @horse_ebooks
  - @leanapapp
  - @leducviolet
  - @leyawn
  - @lowenaffchen
  - @mattytalks
  - @max_read
  - @mobute
  - @regisl
  - @robdelaney
  - @runolgarun
  - @UtilityLimb
  - @virgiltexas
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Figure 3. A screenshot of a LiveJournal-embedding website showing a list of status updates. Retrieved on 23 April 2018 from the page as archived by The Internet Archive’s Wayback Machine on 4-11 December 1999 at http://web.archive.org/web/19991204162702/http://hobagz.skankywhore.com/ (p.78)

Figure 4. A screenshot of Flickr’s page for the photo ‘Alex the Formula One Golden Retriever’ showing comments and a list of tags, displayed separately. Retrieved on 23 April 2018 from the page as archived by The Internet Archive’s Wayback Machine on 10 November 2006 at http://web.archive.org/web/20060209051522/http://www.flickr.com:80/photos/andrewmorrell/61873036/. (p.87)

Figure 5. A screenshot of del.icio.us’ front page circa 2006, showing a number of links with relevant tags displayed below them. Retrieved on 23 April 2018 from the page as archived by The Internet Archive’s Wayback Machine on 12 April 2006 at http://web.archive.org/web/20060412031139/http://del.icio.us/ (p.87)


Figure 7. A screenshot of irssi, an IRC client, with the ‘revolutionary’ theme. Retrieved on 23 April 2018 from the Irssi Themes page. (p.107)
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Figure 10. A screenshot of a forum post on 4chan, displaying a guide on how to promote the #GamerGate tag through the use of Twitter accounts with fake identities. Retrieved on 17 August 2017 from ‘4Chan gamebros raise a sockpuppet army: "For extra class, present yourselves as normal people."’, on We Hunt the Mammoth, 31 August 2014 (highlights added by We Hunt the Mammoth). (p.146)

Figure 11. A screenshot of a number of tweets that were part of a ‘Twitter performance’ of the Broadway musical Next to Normal. Cited in Muse, 2012, p.45. (p.171)

Figure 12. A screenshot of two tweets appearing in a Twitter timeline. Both tweets are by the same author; the lower one was deleted later, the difference being a capital letter that was changed to a lowercase one. Retrieved 21 November 2016, from https://www.twitter.com. (p.185)

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Abstract

Affordances have long been understood to be an important factor in determining what happens on online social platforms. Software has features that makes certain behaviour easier and other behaviour more difficult; through such subtle nudges, people are guided into using the software, and the platform, for certain purposes.

But affordances do not exist in a vacuum; they were created by people, who in turn were influenced by various factors and forces. In this thesis, I appropriate Bogost and Montfort’s platform studies framework to perform a platform study of Twitter and IRC, reconstructing various features and types of expression that may be found on these platforms to reveal the processes that are at work in fundamentally shaping what people do on them.

I start the thesis by reconstructing the development of both platforms, historically analysing specific features in detail and identifying which factors figured into their development. This reveals how seemingly unrelated or unidentified forces have the power to shape platforms and by extension what people do on them.

Continuing, I take a closer look at various popular genres of expression that can be found on Twitter and IRC, again identifying the underlying affordances and forces that make them successful. The central theme here is the relation between a platform and its affordances, and to what extent and how they in fact have the power to determine what genres of expression are possible and successful.

Finally, I investigate the imaginaries people hold about these platforms; what they think Twitter and IRC can do for them, and how these attitudes shift over time. This provides a more abstract, high-level overview of what these platforms are suitable for (or are perceived to be suitable for), allowing for general insights on how a platform develops itself as a space for particular kinds of expression; and how such images compare to the expressive reality that was found in previous chapters.