Sharing the News

– A quantitative study on sharing in social media –

Master thesis by

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Abstract

This study looks into the underlying psychological motivations for sharing in social media. Specifically how *high arousal emotions* (anger, joy, anxiety, awe), *social currency*, and *practical usefulness* affect sharing. A sample of 108 Norwegian newspaper articles, that have been shared on Facebook, are analysed using quantitative content analysis. By replicating Berger and Milkman's method in *Why Things Go Viral* (2012) I investigate wether their findings are generalisable to a Norwegian cultural context. Findings, although not identical to the original study, show that high arousal emotions, social currency, and practical usefulness are present to a high degree in shared news content. The study has practical applications for anyone who wishes to understand the viral process or to create viral content.

Sammendrag

Denne oppgaven undersøker de grunnleggende psykologiske funskjonene bak deling i sosiale medier med vekt på faktorene *aktiverende følelser* (sinne, glede, angst, ærefrykt), *sosial valuta*, og *praktisk nytte.* Et utvalg på 108 norske nyhetsartikler, som har blitt delt på Facebook, undersøkes i en kvantitativ innholdsanalyse. Ved å replisere Berger og Milkmans metode i *Why Things Go Viral* (2012) undersøker jeg om deres funn er generaliserbare til en norsk journalistisk og kuturell kontekst. Mine funn viser at aktiverende følelser, sosial valuta, og praktisk nytte er faktorer som er tilstede i høy grad i delt nyhetsinnhold. Oppgaven har praktisk nytte for alle som ønsker å forstå den virale prosessen eller skape viralt innhold.

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WOM	Word of mouth
eWOM	Electronic word of mouth
SNS	Social networking site
Viral	Online person to person propagation of information

1 Introduction

1.1 Background

Communicating and sharing information is an important part of human behaviour, and integral to the progression of our society. The passing on of knowledge happens in many different ways, in speech, in writing, in doing, and even in passing on our own genes we are sharing information. With this perspective we may start to appreciate that sharing information is not just something we do, it also serves a purpose. Sometimes it may be as simple as exchanging recipes for food, but other times it could be of vital importance, the difference between life and death even.

Dawkins, in The Selfish Gene (1976), theorised how the evolution of culture probably has a much greater impact on the shape of human society today than our rate of biological evolution. It's the ability to pass on ideas that may spread, and sometimes change along the way, that ensures continued cultural evolution. Dawkins described how pieces of cultural information propagate in a society, spreading from one brain to the next, and how an idea may spread wide if it has great "psychological appeal". He also states that asking *why* an idea has psychological appeal may be useful, although he doesn't delve further into this matter.

With the above in mind it becomes evident that knowing why some information is shared and some not shared at all, is a subject worthy of scientific exploration. In this thesis I will use the word *sharing* mostly to describe the small everyday occurrences of sharing that is traditionally called *word of mouth* (WOM). Word of mouth is information transmitted from one person to another via active sharing. In our day and age communication is increasingly happening online in social networks and e-mails and instant messaging, which has brought word of mouth into the digital era, and made it *viral.* When something goes viral online, wether a video, photo, article or song, it means that it is being shared from one person to the next via the many different online communication channels we have available today. It is spreading from person to person like a virus, hence the term viral.

For many people the new viral media have become a new theme in marketing as more and more brands are trying to make their ads go viral. Anyone looking to spread a piece of information will benefit from knowing what type of information is

best suited for virality. However this is not an easy feat as there is little research into what exactly encourages us to share some information, while other information receives no word of mouth, physical or online. Thus it will be very useful to analyse this process and try to understand what drives sharing between individuals.

1.2 Scientific context

While previous research (Godes & Mayzlin, 2004; Trusov, Bucklin, & Pauwels, 2009) have examined the consequences, speed, and reach of word of mouth, there has been much less attention paid to its causes or to why people talk about one thing versus another. This thesis will explore the characteristics of viral media, why some things go viral and others do not, and which basic properties give media the best chance of spreading virally. I will base my research on Jonah Berger's research on contagious media (2013) where he defines key traits that are necessary for information to go viral, and investigate the extent to which these traits are present in Norwegian internet newspaper articles being shared via Facebook. Berger defines certain emotions as the key drivers of information sharing. Other studies have investigated word-of-mouth by looking at different brands, and what characteristics are present in the brands that receive the most word-of-mouth (Lovett, Peres, & Shachar, 2013). However, to further scientifically explore the subject, it is necessary to look at the deeper underlying causes of sharing, i.e the emotional, social and functional responses we have to any given piece of information.

Jonah Berger is a professor of marketing at the University of Pennsylvania. From 2005 to 2013 he conducted several research projects looking into why certain things catch on in popular culture and become subjects that are talked about and spread via word of mouth. His research was conducted from a marketing perspective and led to the book Contagious: why things catch on (2013) in which Berger defines six key traits that help media become liked, remembered, and shared:

1. Social Currency: We wouldn’t share something that made us look stupid or something very controversial that might give others a negative impression of us. Therefore we share the things that provide us with social currency, meaning that we like to share things that are interesting, fun, clever or a current issue.

That way we paint a picture of ourselves as interesting, fun, smart, and up to date on politics and world events, thereby gaining social currency.

2. Triggers: Simply put this is something in our everyday lives that triggers an idea or thought represented in the viral content. Something that reminds us of the message. In the case of Rebecca Black's song «Friday» there was a huge spike in youtube views every friday because that day of the week triggered the thought of the video and made people search for it online.
3. Emotion: Content that evoke powerful emotions go viral. Berger found that certain emotions like awe, love, anger, anxiety activates us to action and makes us share whatever caused these emotions. Both negative and positive emotions promote sharing, but certain emotions are better at making us act and share.
4. Public: Something that is in public view, for example the brand logos we carry around with us every day. The logos on our phones and laptops are meant to be visible to the people around us because, Berger argues, we tend to imitate and copy others.
5. Practical Value: Provides useful knowledge about something.
6. Stories: A good story makes it easier to sell the message. If you can wrap your content in an engaging story it is much more likely to go viral. In the marketing world this means hiding the sales pitch behind an engaging story.

Berger's six traits describe why certain content catches on and becomes popular, but they are not all facilitators for sharing. I wish to explore online sharing or electronic word-of-mouth only, which is why I will concentrate my analysis around the three characteristics that, according to Berger, are directly related to sharing i.e; *social currency*, *emotion*, and *practical value*.

In the years since Berger's study of emotional content, other research (Fan, Zhao, Chen, & Xu, 2013; AddThis.com, 2014; Bayerl & Stoynov, 2014) have been carried out that confirms the potential emotional content has for going viral. These studies will be accounted for in chapter 2. Most studies however do not draw the link between these specific emotions and the high arousal states they cause. Hence it is appropriate to delve into this matter again although on a smaller scale, to see if a sample of Norwegian newspaper articles will yield the same results and bring us closer to a conclusion on why certain emotions lead to sharing in social media.

1.3 Research question

Research question: Does emotional selection, social currency, and practical utility affect sharing in social media?

> From the entertaining to the informative to the downright gruesome, content that grabs the reader's attention by generating an emotional reaction triggers the most engagement. (AddThis.com, 2014)

The quote above, from technology news site AddThis, talks about the potential for sharing that emotional content can have. At this point it is important to distinguish between content that is self generated and the type of content the AddThis article talks about which is *non* self generated content. Self generated content is, as the name implies, created by the person who posts it. It can be a status update about what the poster is doing on that day or a picture or video showing his/her family or friends etc. Non self generated content on the other hand is created by someone other than the person sharing it. While it's reasonable to believe that there is a difference between what triggers sharing in the two, my own research will revolve around the latter, sharing of non self generated content such as newspaper articles. As examples of how the above mentioned viral traits may manifest in news content, below is a list presenting the most shared Norwegian news articles published between November 2013 and November 2014. Using the top three results as a basis we get a list dominated by parental issues, issues parents of both young and older children may recognize.

#	**Article title:**	**Facebook shares:**	**Date published:**
1	1700 elever blir mobbet. Odin var en av dem.	118155	08.11.2014
2	Kjære storbarnsforeldre	74565	24.08.2014
3	Når ble det forbudt å irettesette ulydige barn?	54566	24.11.2014

Table 1: The three most shared articles from 26.11.2013 to 26.11.2014. Source: BuzzSumo.com.

Article #1 is about a boy who after being bullied for years took his own life at the age of 13. Article #2 complains that only parents of young children are allowed to admit to

their parenting challenges, and that the challenges parents of adolescents face are less talked about, but equally important, and even more difficult at times. Article #3 is about the tendency to not correct children's bad behaviour from fear of being politically incorrect or appear to be abusive. These articles contain subjects that many people will acknowledge as a big part of their lives. Further, they are loaded with feelings of anger and sadness, as well as providing practical tips about parenting. This hints at the traits of virality laid out by Berger (2013) and Berger and Milkman (2012).

1.4 Practical applications

The purposes of researching the sharing process in social media is, from an academic viewpoint, to comprehend the underlying factors that encourages us all to share information. From a more business and marketing related perspective being able to make a message spread is key to selling a product or service, or to circulate ideas. If social networks can be used to distribute content by targeted word of mouth then the traditional mass media become inaccurate and very expensive in comparison. Thus we see that the PR and marketing business may have much to gain by understanding and exploiting the viral potential in social media. Online information sharing provides a marketing tool that is much more cost efficient than the traditional ones allowing, in theory, everyone to reach out to people all over the world for potentially very little money. This applies not only to big brands with big budgets, but also to the smallest non-profit organization and the one-man sole proprietorship working from his/her home. Understanding both the tool that is social media as well as the process behind information sharing is vital if one is trying to reach out with any sort of message to the public. Research has also established that customers coming to a brand because of word of mouth referrals are more loyal and add more long-term value to the brand than customers acquired from traditional forms of advertising and PR (Shubin & Truyen, 2014). If we can learn to recognize the driving factors in online content sharing we have a powerful tool for marketing, but also for message diffusion in general. This study will partly confirm the findings of Berger and Milkman (2012), and lead us closer to recognizing the effects high arousal emotions may have on content sharing.

In marketing and PR the objective is to diffuse a message within a given target group or population. Traditionally this is done with ads in printed media, television,

internet banners etc. In other words it is done by pushing persuasive messages to an audience via mass media. This persuasive content is meant to turn the audience into potential customers. However the problem that marketers face when doing this is that once the audience recognizes a message as advertising it develops a psychological resistance towards it. This is a natural defence mechanism to any perceived threat to behavioural freedom (Menell, 2013). This resistance and skepticism can be greatly reduced if the audience is not aware that it is being persuaded. Marketers recognize the *Low Involvement Processing Model* which emphasizes that we tend to process media passively at a subconscious level (Menell, 2013). This means that advertising has greater effect when it is not perceived as such directly, but rather consumed as a form of passive learning. This creates associations to the brand that the target does not recall the origin of, thus making use of what Menell describes as "subliminal pills for the subconscious" (2013). The ethical implications of the above is thoroughly discussed in marketing literature and will not be touched upon any further in this thesis. My goal with the above paragraph is to explain why my research may be relevant.

In the world of marketing it is commonly believed that the success of a product and its sales numbers is directly related to the WOM it generates. Marketers wish to understand the effect WOM can have on product adoption as the traditional forms of marketing communication appear to be losing effectiveness (Trusov, Bucklin, & Pauwels, 2009). WOM can affect consumers' inclination towards one product or another, or build awareness about new products. On the other hand we can also assume that a successful product will create more WOM leaving us with a chicken or the egg dilemma about which of the two comes first, WOM or product success. High WOM one day is not equal to high sales the next day, it may just mean that sales were high the day before. Regardless of causality Godes and Mayzlin report that there is strong empirical evidence of WOM and product sales being linked (2004).

While WOM is an effective tool for anyone who wants a message to spread it's also established that the medium itself influences and shapes conversations. Berger and Iyengar (2013) analysed almost 20,000 everyday conversations to find that communicating via oral vs written communication affects the issues or brands that are discussed. This means that the form of communication influences what we talk about. Written communication in the form of online sharing and eWOM is more likely to contain information or products viewed as interesting due to its non-instantaneous nature. Email, texting, and communication via SNS's allow more time for reflection

and developing arguments, which leads to the exchange of more useful information. A related factor is *self enhancement,* discussed further in chapter 2, which is an important component in information sharing. Berger and Iyengar's research (2013) show that the above mentioned media, in addition to allowing time to think, also facilitate self enhancement to a much greater extent then oral communication, and is therefore a good tool for spreading viral messages.

Viral marketing and viral advertising refer to marketing techniques that make use of online social networks ability to spread messages from person to person like a virus. The implications of the above are that measuring eWOM is something that marketers may benefit from. Success in viral marketing, or making any type of content spread, relies upon understanding why knowledge-sharing happens. As it is difficult to guarantee a viral success the marketing industry will have much to gain by understanding the underlying motivations for sharing and word-of-mouth. While we acknowledge that understanding virality can be a powerful tool for marketers my research also shows that it can be a double edged sword. Positive content is shareable, but so is negative content, and a viral campaign that by mistake provokes a negative high arousal emotion, such as anger, in its audience may quickly turn out to go viral for completely unintended reasons (see chapter 2).

1.5 Method introduction

Below I will briefly account for the methodical choices made in this thesis, while also providing a more thorough explanation of the same in chapter 3. One goal of scientific research is to identify the cause and/or the effect of a chosen phenomenon. In other words scientific inquiry can be used to see wether variable A causes outcome B, and if it does scientists will wish to test that it does so repeatedly over time, thereby establishing a plausible relationship between the cause and the effect. However it is almost impossible to rule out all other possible explanations for an effect (Neuendorf, 2002). The researchers job then is to perform his/her tests to such an extent that the research is as complete as possible and identifies as many variables as possible. Because cause and effect cannot be determined without any other possible explanations we substitute the word cause for *independent variable* and the word effect for *dependent variable*. A variable is a measurable unit that may change from one case to another. In the case of my own research project the independent variables

are the values of emotionality and practically useful content in newspaper articles, while the dependent variable is the extent to which those articles are shared.

Replicability means the study can be replicated by other scientists in a different context with different units being analysed, and the results should be the same. This thesis will in many ways be testing the replicability of Jonah Berger's research on viral media. By replicating one of his studies, using different material in a different cultural context, I will be able to find a measure of replicability in his theories. Thus moving research on viral phenomena a step closer to established theory.

According to AddThis (2014), analysing millions of online sharing actions, clicking the "share on Facebook" button is the worlds most popular platform for sharing non self generated content with 26% of total shares. The runner up is the more traditional copy/paste form of sharing, where a URL is copied and then shared via Facebook or other communication tools, at 21%. This leads me to believe that collecting data on Facebook sharing will provide a representative view of total online sharing activity, which will allow me to analyse the shared content and identify the main psychological drivers of information sharing.

To answer my research questions I will employ quantitative content analysis, and to an extent recreate Berger and Milkman's research (2012) within a smaller Norwegian news context. I will analyse a selection of Norwegian news articles being shared on Facebook using Berger and Milkman's method, and examine to what extent high arousal emotions, social currency and practical value drive online sharing of Norwegian news articles. The online data gathering service BuzzSumo.com will be used to gather the most shared articles on Facebook from the most popular Norwegian online newspapers, Aftenposten, VG, Dagbladet, and Nettavisen. My selection will be the top 3 most shared articles collected on a daily basis spanning one month.

I will code for Berger's defined emotions of awe and joy on one side, and anger and anxiety on the other to investigate which emotions are the drivers of content sharing. In addition to emotions articles will be coded for their ability to provide practically useful information and their value as social currency. These units will be coded on a Likert scale using manual coding done by myself. The Likert scale places the units on a scale from 1 to 5 describing to which extent the different variables are present in the article. The Likert scale has been used with success by previous researchers, using manual coding, to measure emotion in (Berger & Milkman, 2012) and (Heath, Bell, & Sternberg, 2001).

Ikke i det hele tatt				Veldig
1	2	3	4	5

Table 2: Likert scale describing the presence of the measurement units.

Research on traditional word-of-mouth, that is word-of-mouth outside of online networks, have had some issues with validity and generalization being based mostly on self-reporting from subjects. The advent of online social networks however has made research on this topic more valid and results more robust (Berger & Milkman, 2012) The relative ease of gathering data from SNS's means that tracking sharing behaviour has become much easier.

1.6 Thesis structure

In the following **chapter 2** I will present the theoretical background for my thesis. The purpose of this chapter is to account for online information sharing in general, why research into online sharing is important, as well as to establish the current literature on each of the viral variables defined by Berger and Milkman (2012) and Berger (2013). **Chapter 3** will further explain the methodological approach taken in this thesis, that is how the research has been conducted. The chapter also contains an account of the quality of the research by validity and reliability measures. **Chapter 4** will present the findings of my analysis while **chapter 5** will explain the meaning of these findings in light of previous research. In **chapter 6** I provide a summary and account for the main findings of the study.

2 Theoretical framework

2.1 Memes, the cultural genes

The term *meme* has been around for a long time. In pop culture its most common use is perhaps to describe the huge number of popular internet phenomena that spread as images, videos, .gif files etc. A much used example is the ever popular cat pictures. Images of cats behaving in a manner seen as cute, funny or strange, often with a text saying what the cat is supposedly thinking is often seen at the top of message boards and link sharing sites like Reddit and Digg. Images like these are called memes, yet the original definition of a meme encompasses much more than funny images on websites. This subchapter will account for the origin and meaning of the term meme as it can be used to understand parts of the viral process. Meme theory has its share of critics, and the main criticism will be briefly touched upon. However by staying away from the field of *scientific memetics*, keeping to the very basic idea of memes, I believe memes can be seen simply as a metaphor for ideas and behaviour. Ideas and behaviour may spread from one person to the next via copying, and the term meme provides a way of explaining and understanding this process.

In The Selfish Gene (1976) Richard Dawkins proposed that a new word was needed to describe the many small individual units, or *cultural genes*, that make up a culture. Dawkins book deals with genes and how they affect / are affected by evolution, but he also determines that genes aren't the only things affecting the evolution of humans and human society. Another factor are all the little informational bits and pieces that together form what we call culture. These units are stories, music, habits, language, clothes etc, all the things that when put together form a specific culture. He named these individual bits *memes* as a label for the cultural equivalent of genes. The word itself he derived from the ancient greek *mimeme*, which means imitation.

Genes hold the blueprints for building an individual. They are pieces of biological information, that produce the traits of any given person or animal, the building blocks of all animals as well as human. For genes to be passed on, so that your offspring can inherit your own traits, they must be able to *replicate*, and they must be able to *transmit* the replication from parent to offspring (Brooker, Widmaier, Graham, & Stiling, 2011). Sometimes the replication process creates an imperfect

copy, this mutant may be worse or better suited to survive than the original. When a better copy emerges it will spread and gain territory over its parent gene, slowly changing the gene pool, thus driving the process of biological evolution (Brooker et al., 2011). It is exactly these characteristics that are also present in successful memes according to Dawkins, but while genes work biologically, memes are the drivers of cultural evolution.

Memes then, are something that can be imitated or replicated, and passed on to other beings just like genes. As genes spread from body to body by mating, so can memes travel from mind to mind by imitation. If we watch a video we enjoy, or read a good article we may choose to share its ideas or the entire piece with others. If they enjoy it as well, re-share it, and this process repeats itself again and again the meme can be said to be self-replicating. This process is also reminiscent of how a virus spreads from one host to the next. In fact Dawkins even used the comparison of a virus parasitizing the brain in his 1976 book. Thus perhaps he seeded an idea that would turn into the term viral media some years later, further showing how memes, just like genes, may spread and evolve.

Drawing upon Dawkins theories on memes and cultural evolution Juan Delius (1989) further expanded upon the functions of the brain that allow memes to thrive and replicate. In the words of Delius "cultural evolution is the inevitable spin-off of an information-creating, information-transmitting, information- translating and information-selecting process". Memes are created in, and transmitted from one mind, then received and translated in another. The information they contain survive in the minds of the participants of the culture in question. Sometimes this information is transmitted and received as a perfect replication while other times meme mutations may arise. Such mutant memes may, if accepted and diffused in a population, result in new cultural innovations and furthers the cultural evolution.

Dawkins (1976) stated that a meme's success was hinged upon its longevity, fecundity and copying-fidelity. Longevity refers to how long a particular meme might live. In this technological age any digital meme may, at least in theory, last forever. If not it will surely be copied and/or changed to live on in a slightly altered form. Fecundity is how fertile a meme is, or how well it is able to root itself in human minds, and to be passed on. To describe how accurately a meme can be copied Dawkins uses the term copying-fidelity. In the world of interpersonal word-of-mouth communication a meme will most likely be altered over time as it passes from human mind to human

mind. It will take a long time to change into something unrecognisable, and maybe it never will, but a digital meme, living in computers, can be copied with complete accuracy. Creating a copy of digital information is only a matter of pressing a combination of a few buttons on a keyboard, and any meme may live forever on a hard drive, or on the internet.

Biological evolution has led many species to cooperate (Delius, 1989). A flock of birds benefit from the group having many sets of eyes to spot dangers with. A pack of wolves can take down much larger prey than one single wolf could manage. In humans we see the same behaviour although culturally, not biologically, determined. Sects, political parties, labor unions, etc. are examples of humans grouping together to maximize their efficiency in spreading their beliefs. These beliefs are the memes they have received from others of their culture, and that they wish to pass on to others.

The term meme provides a way of talking about and understanding the process of information-creating,-transmitting, -translating, and -selecting. It should, for the purpose of this thesis, be limited to that definition. Thus it serves a very useful function in explaining the origins of research into information sharing.

2.2 Word of mouth marketing to virality

Early theories on information diffusion focused on important opinion leaders in a network. These theories assigned great value to a few highly influential users in any given network. These key users are needed to adopt and redistribute a message if it is to reach the entire network, while the information coming from these users is also seen as highly credible. Katz (1957) called this process the "two-step flow" model. His work shed light on the influence a few influential members of a network may have. The two-step flow model also describes how people voting in an election base their voting decisions more on interpersonal influences than on mass media influence (Katz, 1957). This means that word of mouth from our own social network will have a bigger impact on our decisions than messages coming from the mass media. It is assumed that information coming from a personal contact, rather than an organization or company, is regarded as more trustworthy and honest.

Word-of-mouth (WOM) refers to interpersonal oral communication (Arndt, 1967). With the coming of online social media *electronic word-of-mouth* (eWOM) has become an increasingly popular expression, and *viral media*, referring to the infectious

nature of information, has gained ever more track. In fact Dawkins compared the meme to a virus parasitizing the brain in 1976, but did not elaborate on this possible birth of what would become the term *viral media.* It was Douglas Rushkoff who coined the term *media virus* in 1994 (Rushkoff, 1996), before the dawn of social media, where he describes the concept as a piece of information hidden in an entertaining or informative shell that infects a network with its ideological content:

> The "protein shell" of a media virus might be an event, invention, technology, system of thought, musical riff, visual image, scientific theory, sex scandal, clothing style or even a pop hero –as long as it can catch our attention. Any one of these media virus shells will search out the receptive nooks and crannies in popular culture and stick on anywhere it is noticed. Once attached, the virus injects its more hidden agendas into the datastream in the form of ideological code -not genes, but a conceptual equivalent we now call "memes". (Rushkoff, 1996)

2.3 Emotional content

The idea that emotional content can go viral is not new. Heath et al. (2001) demonstrated that memes are highly dependent on evoking certain emotions to diffuse in a population. Moreno (2014) argues that collective anger in Spain, after a huge rise in house and property prices and the following economic crisis of 2008, led to the short video Españistán (Salo, 2011) going viral in Spain. Bayerl and Stoynov (2014) trace a popular protest meme from its birth, again with the conclusion that anger functions as fuel for information sharing and virality.

Grant, Botha and Kietzman (2015) looked into the YouTube comments on several branded viral videos. They found that the most frequently used affective words, about the videos, were *Love (fun), Cool, Awesome, Amazing, Feel Bad (Empathy), Wow, Disugust(ed), Lol, Happy*. These are words that express strong emotions. Most of them carry a positive meaning and one could argue that *cool, awesome, amazing*, and *wow* convey more or less the same meaning, the feeling of awe. *Love (fun), Lol,* and *Happy* are each different expressions for happiness, and *Feel Bad (Empathy)* and *Disugust(ed)* are somewhat different in meaning, but both are strong negative emotions.

A study from 2014 shows how emotional states can be transferred from one person to another through "emotional contagion" (Espinosa & Bernales, 2014). This study finds that emotion is contagious in an online social network by showing how a friend's/contact's status update encourages others in the network to post updates conveying the same basic emotion. Other studies into emotion diffusion in social networks have largely focused on the impacts of negative versus positive emotions in general (Espinosa & Bernales, 2014), or just one emotion from each category (positive or negative), ignoring the many other emotions that lead to sharing. Emotions such as anger and fear, though both are negative, may have a hugely different effect on sharing behaviour. In their recent study conducted on Weibo, the Chinese equivalent of Twitter, Fan et al. (2013) found that anger spreads faster than joy. Their study shed light on the propagation of anger, fear, joy and disgust on the Chinese social site Weibo. They found that anger had the biggest potential for virality with joy coming in second. Fear on the other hand they found to have little viral effect.

In 2010 Berger and Milkman conducted a research project aimed at mapping the emotional content of articles that made it to the New York Times "most emailed" list (2012). They sought to map out the basic driving factors behind sharing of information. The New York Times "most emailed" list is based on the number of people using the email link at the bottom of each article to share it with at least one other person (Berger & Milkman, 2012). Berger and his team used a web crawler that scanned the list of the top 20 most shared articles every 15 minutes for 6 months. They then coded this material searching for content causing high arousal emotions. Berger and Milkman built their hypothesis on Barrett and Russell's 1998 article "*Independence and Bipolarity in the Structure of Current Affect*", in which they classify certain emotions as *high arousal*, and claim that these particular emotions are more activating than others. Considering that the act of sharing information requires activity and a desire to share, Berger and Milkman was prompted to link high arousal emotions with online sharing and word of mouth. In their (2011) article "*What Drives Immediate and Ongoing Word of Mouth?*" Berger and Schwartz suggest that high arousal emotions, wether negative or positive, are integral to the sharing process because they promote action to a much greater extent than low arousal emotions like sadness or contentment. Their results show that high arousal emotions, both positive and negative, are linked to the sharing of information. On the positive side joy and awe are action promoting emotions that are positively linked to sharing while

contentment, also a positive emotion, is characterised by low arousal and negatively linked to sharing. On the side of negative emotions they find that anger and anxiety are emotions that promote sharing. Illustration 1 maps activation and deactivation in emotions.

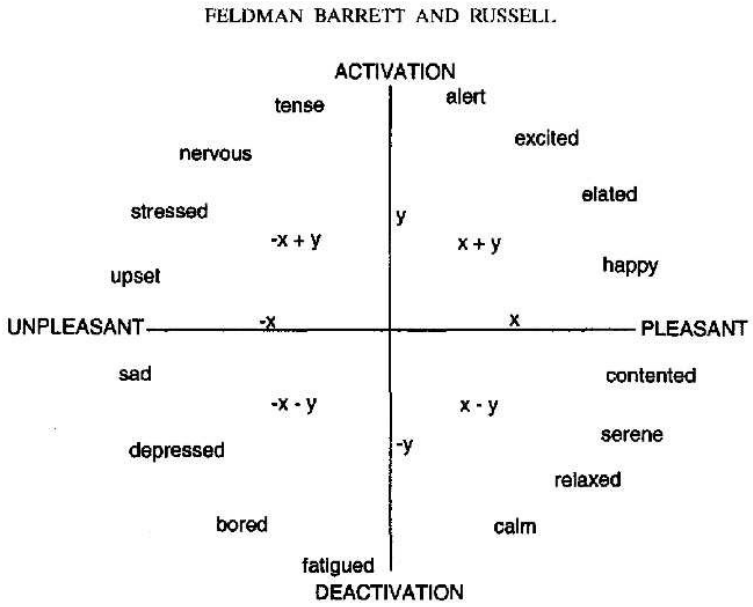

Illustration 1: activation vs deactivation in positive and negative emotions. (Barrett & Russell, 1998)

Barrett and Russell (1998) state that high arousal emotions such as anger, anxiety, joy and awe, promote action whereas low arousal emotions like sadness and contentment are associated with less activity. Studies of memes and urban legends suggest that their ability to stay in the cultural memory is based on their emotional content (Heath et al., 2001). Heath, Bell and Sternberg's paper from 2001 conclude that popular memes awake strong positive or negative emotions in the reader, however they also express a need for a theory to explain why both extremes on the emotional scale can have such a similar effect on the diffusion of memes.

Based on the idea that emotion promotes sharing of information we may assume that any content being shared on a large scale must evoke the same or similar emotion in all, or at least most, of its receivers. The message sender will choose to share or not share based on the expected reaction from the receiver. In this way sharing becomes a form of social bonding, creating and enhancing social interactions, by

passing along ideas (Heath et al., 2001). When narrating a story or passing along information the sender is likely to fill in forgotten information with details that recreates the reaction he or she had when first exposed to the story, hence, when a story is diffused in a group, it is likely that it's the consistent emotional value of the story that leads to its transmission and re-transmission rather than the exact wording of the story (Heath et al., 2001).

Heath et al. (2001) use the diffusion of popular urban legends to suggest that fact and truth are not necessarily the best facilitators of meme diffusion. Instead they argue that emotions such as anger, fear and disgust provide a much better breeding ground for the propagation of a story or meme. Examples used are US urban legends about children receiving razor blades and poisoned candy in their Halloween baskets. These rumours or urban legends were widespread and in many cases perceived as truth. However the reality was that most of these stories were hoaxes or pranks that started after reports of a few children suffering small cuts from sharp objects in their candy bags (Heath et al., 2001). Their study suggests that memes undergo an *emotional selection* leading to the survival of memes that manage to evoke the same emotional response across a large selection of people. On the other hand if few people experience an emotional response, or the meme fails to evoke the same emotion in most of its receivers, the meme will not catch on regardless of its truthfulness. Their study focuses mainly on the emotion of disgust and the authors admit that this may limit the generalizability of their results. They call for studies that look into other basic emotions as well as research into the mechanisms that makes us actively share this type of content.

Bayerl and Stoynov (2014) trace a high arousal meme from its birth, through a huge increase in popularity, to its decline and disappearance. They specifically set out to map the influence that picture memes have in shaping public discourse about political injustice. The research was done in the context of the Occupy Wall Street movement of 2011 where several incidents of alleged police brutality created anger and frustration directed at the government (Sledge, 2013; Friedersdorf, 2012). After an incident at the University of California the "pepper spray cop" meme took off and gained soaring popularity as a symbol of government oppression. In addition to using this meme to demonstrate the effect memes can have on public discourse the researchers also describe the influential and contagious power of anger. In a related research paper by Moreno (2014) the viral power of a Spanish protest meme is

revealed. The short animated documentary Españistán (Salo), published on YouTube in 2011, explains in simple terms how Spain ended up in its 2011 state of housing and unemployment crises. Moreno advocates that the video helped people understand how the status quo had come to be, fuelling people's anger at the people and institutions responsible for Spanish financial troubles. The feeling of anger was shared by many, and the video became very popular in Spain. However it did not spread across borders and continents like the "pepper spray cop" meme did.

The birth of the "pepper spray cop" (PSC) meme was at a student protest at the University of California on November 18th 2011, when a campus police officer used pepper spray on some of the protesters. A picture showing the police officer, in a seemingly casual manner, pepper spraying protesting students who are sitting on the ground was quickly picked up as a symbol of oppression and police brutality.

Illustration 2: the original photo that turned into the "pepper spray cop" meme. http://knowyourmeme.com/memes/casually-pepper-spray-everything-cop

Bayerl and Stoynov note that the image was first published when it was uploaded to the website Reddit on November 19th, the day after the incident (2014). It then became a popular image to "photoshop", or to change and add to, in an attempt to create humorous yet politically poignant messages. An early adaptation of the image had the added text: "don't mind me, just watering my hippies". Although some versions of the PSC meme used humour to engage, there were many examples of a more serious approach. The meme received a huge amount of alterations and additions. Placing the officer into other historic images showing abuse of power became popular.

Illustration 3: another alteration of the PSC meme. http://blogs.wsj.com/chinarealtime/2011/11/25/chinese-internet-users-shrug-at-pepper-spraying-cop/

In quick succession the meme was transmitted into other media as well, leading to songs and videos on youtube, and news coverage in the traditional media (Chin, 2011; Mann, 2011).

Bayerl and Stoynov conclude that that the PSC meme succeeded because it was a protest meme that embodied the struggle of the many against the powerful few. It was created during the Occupy Wall Street protests in the USA and therefore had a wave of political and social anger on which to support itself. The meme became a part of the protests as a way for people to bond over the same issues. Dawkins (1976) illustrates that memes able to create the same emotion in all, or most, of its recipients are likely to be the most successful ones. When sharing, and essentially infecting others with an emotion, bonds are formed that enhances social interaction within a group (Heath et al., 2001).

The PSC meme had a quick rise and an equally quick demise. Bayerl and Stoynov theorise that the many remixes and alterations to the original meme made it lose its political message over time. Once the meme was being used without its original intention of political protest, interest dwindled and it became useless as a protest meme.

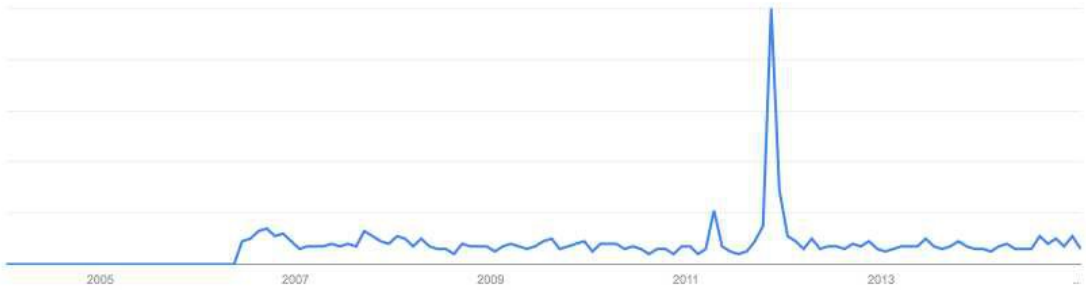

Illustration 4: Google Trends graph for the search term* "pepper+spray+police". *The highest point on the graph is November, 2011.

The emotion of anger directed at law enforcement went viral through the PSC meme, and a more recent event also connected to US law enforcement is another example of the same. On the 22nd of April 2014 the New York Police Department (NYPD) published a tweet that read: "Do you have a photo w/ a member of the NYPD? Tweet us & tag it #myNYPD. It may be featured on our Facebook". This tweet was quickly "tweetjacked", meaning that its content and/or hashtag was picked up by the public and used for a different purpose than intended (Ward & Wylie, 2014).

Illustration 5: The original twitter update from the NYPD. The myNYPD hashtag is still active at the time of writing, January 2015. http://www.viralglobalnews.com/2014/04/23/nypd-twitter-campaign-mynypd-backfires/

When the NYPD published this tweet one must assume they expected positive feedback such as pictures of police officers smiling and making the general public happy. Their tweet had an attached image of two officers smiling at the camera with another smiling individual between them. They likely expected more of the same in return as a way for them to show the public that they are well liked and do good work, in an attempt to build better public relations. Yet their good intentions backfired when thousands of twitter users used the hashtag to post pictures showing police brutality and incompetence. Tran (2014) reports that in less than a day of the post being published more than 70 000 users had tweeted about police brutality using the "myNYPD" hashtag. Even at the time of writing this the hashtag is still active, being used mostly for tweets criticising the police.

Illustration 6: A tweet from January 17th using the myNYPD hashtag to criticise the police, 9 months after the hashtag was created

The NYPD delivered their hashtag at a time when the Occupy movement was still alive, and wounds from the height of those protests were still fresh. The memories of multiple events of alleged police brutality, coupled with what has been labeled the 99% vs the 1%, or the struggles of the grass root against the elite, may have triggered the anger that we see in the usage of #myNYPD. Both the pepper spray cop meme and the myNYPD hashtag became tools for people who wanted to "fight the system", being used to point out injustices and flaws in the political and social system of (mainly) US society. The two above mentioned police memes went viral all over the world, including in Norway. The next examples however will be based on incidents

happening in Norway bringing viral emotions closer to home, showing how the same effect can take place in multiple cultural groups.

In an example of bad social media judgement the NDL, the Norwegian Defence League, managed to go unexpectedly viral. A tweet from September of 2014 caused both anger and joy, and quite possibly a good amount of schadenfreude directed at the NDL. The NDL is an organization that, in their own words, are working against the islamization of Norwegian society (Norwegian Defence League, n.d.). The group is by many perceived as a racist organization, and their protest marches are often greeted by counter protests larger than their own (Lindén, 2011, and Flydal, 2014).

On the 10th of September, 2014, the NDL tweeted that anyone with stories of multicultural Norwegian society they would like to share, could contact the NDL for a reply by their admins (NDL on Twitter, 2014). This led to a large number of retweets with positive stories of multicultural society, such as twitter user "Eksilhomse" who retweeted that his teacher, who was Turkish, used to teach students to solve conflicts with words and not with violence.

Illustration 7: NDL's original tweet and a few of the follow up retweets. https://twitter.com/nor_dl/status/509802787337543680?ref_src=twsrc^tfw

The NDL made a mistake similar to the one seen in the "myNYPD" hashtag. The group expected replies concordant with its own views, but received the opposite. Where the NYPD wanted joy in return, but got anger, the NDL wanted to feed peoples supposed anger at immigrants, but got ridicule and anger directed at themselves instead.

The NDL is an organization that by its very existence makes many people angry. When protesting in the streets it is often met with even bigger counter protests. By posting the above tweet the organization arguably managed to cause not just one, but two high arousal emotions in their audience. The intent of the tweets authors was most likely to have negative stories of the consequences of immigration retweeted to them. That is the obvious way to interpret it, and that is likely what causes the initial anger in the group's opponents. The anger must be seen as the instigator of the viral process in this case, but it was humour and joy that made it popular and brought the incident into the mainstream media's searchlight (Zakariassen & Budalen, 2014). Most of the retweets are humorous in tone, ridiculing the NDL for the content of their tweet as well as calling the authors out on spelling mistakes. An article in Aftenposten detailing the NDL's twitter mistake (Kilnes, Ringseth, & Bråten, 2014) has over 11000 Facebook shares four months after its publication. Considering that news articles receive most of their allotted attention in 1-3 days after publication, and that the average number of shares in my own dataset is 4211 this must be considered a high number of shares.

The above viral phenomena provide examples of negative emotions in viral content. Although the case of NDL's tweet is ambiguous, containing both negative and positive emotions it appears as though negative emotions have a higher chance of going viral than positive, but that is not necessarily the case. The next paragraphs will detail a selection of videos that have gone viral. These videos are positive in content, thereby promoting positive emotions, and have had great international viral success.

Two big viral hits on youtube in 2014 were *First Kiss* (Pilieva, 2014a) and *Would you give your jacket to Johannes? (SOS Barnebyer Norge, 2014)*. In First Kiss filmmaker Tatia Pilieva invites seemingly random people off the street, into her studio, to film them kissing a stranger.

Illustration 8: Screenshot from "First Kiss".

The video follows a documentary form where we see people who are coupled up with someone they have never met, and are invited to kiss each other for the first time. All the couples are a bit hesitant at first, giving off a few awkward laughs and questions about turning the lights off. When they finally go through with it its passionate and emotional, filmed in closeups. It's a video designed to put a smile on the viewers face. After the video was published it became apparent that most of the people participating were actors or models, and that the video was in fact a commercial for a clothing brand, not the intimate documentation of human emotion it first appeared to be (Pilieva, 2014b). However it went viral and was covered in a range of media. By the end of 2014 it was ranked at number 3 of the most popular videos on youtube in that year (YouTube, 2014). First Kiss is a video that awakens high arousal emotions in its viewers, making them feel happy. The brand name associated with the video is stated at the beginning, and the participants are wearing the brand's clothes, but other than that there are no attempts at selling a product in this ad. Its success can not be attributed to a popular product, but to the fact that it was deemed shareable by millions of people worldwide.

In the video *Would you give your jacket to Johannes?*, produced by SOS Children's Villages in Norway, we are introduced to a young boy sitting on the bench

of a bus stop on a cold day. He is not wearing a jacket and is shivering, clearly feeling very cold.

Illustration 9: Screenshot from "Would you give your jacket to Johannes".

The video is shot from a distance away, implying a hidden camera. We see a series of strangers passing by who take an interest in Johannes, asking him where he is going, if he needs help, and ultimately lending him their clothes to help warm him up. The goal of the video is to encourage donations to SOS Children Villages and their program for helping children in Syria (Karlsen, 2014).

The video is a heartwarming display of human emotion and empathy. Seeing another person care for and really put in a little bit of work to help someone out of their problems is an experience that makes us feel better about ourselves. It encourages belief in the goodness of our society, and the idea that we are quite safe because we are never completely alone with our troubles. The video was covered in international media (see Molloy, 2014 and Johnsen, 2014), and, as of January 2015, has over 18 million views on YouTube.

Emotional content clearly has a potential for going viral in social media. Yet we observe that not all emotions are created equal. There is seemingly an overweight of anger on one hand and joy on the other, with other emotions coming in with weaker viral potential. Some studies show negative emotions to be the most viral while others

show the same for positive emotions. Which emotional extreme is the most viral likely depends on the type of content. Something like a news article is presumably more likely to be negative in valence.

2.4 Practical value

Rudat (2013) found that news with high informational value as well as educational information was more likely to be retweeted than other news. News with high informational value was defined as news having a potential impact on a large amount of people. The larger the potential audience, the more informational value. Research subjects also rated informational value proportionally to *importance.* News of high informational value were seen as more important than other news, and vice versa. This hints at the potential virality of practically useful information. Information that the receiver can put into use within a short amount of time. This chapter will demonstrate the value that is put on practical utility in online content. From content marketing to user reviews on shopping sites, useful information is used to attract a larger audience.

The practical value of a piece of information is a factor in determining its virality. Content has practical value if it contains information that the receiver can put directly into use, wether it helps create/do something or just to make a decision. Content that provides some form of practical information can teach the receiver something new, thereby making itself a very valuable asset. Cooking recipes, information with instant practical usefulness, are popular items of exchange both online and offline, leading to the creation of entire food based social networks such as iCook.tw. On marketplaces like Amazon, user reviews that provide information about products are highly influential in guiding purchases.

Providing information with practical value is what the field of content marketing is all about. Hiding advertisement within useful information can help bypass the defence mechanisms that are activated when we see obvious advertising attempts.

> Content marketing is the marketing and business process for creating and distributing valuable and compelling content to attract, acquire, and engage a clearly defined and understood target audience—with the objective of driving profitable customer action. (Pulizzi, 2014)

The above definition establishes content marketing as an act of publishing useful content. The key words here are *valuable* and *compelling*, meaning that content

marketing should provide more than just purchasing information, but actual useful information beyond that of a single product or brand. As with all marketing the goal is of course to drive sales, but doing so while avoiding the conventions of a hot product, lowered prices, or the possibility of elevated social status. Instead content marketing focuses on meeting the need for information among the business' target customers.

Practical value can be provided in many forms. A search on YouTube with the search term "how to" provides 139 million results, most of which are videos explaining how a certain task is performed. The top result at the time of writing this is a video called "How to Cut Rope in an Emergency" (DaveHax, 2014), which simply features a person demonstrating how to cut a piece of rope without using any tools. Even though this information is not needed on a daily basis the video has more than 4 million views.

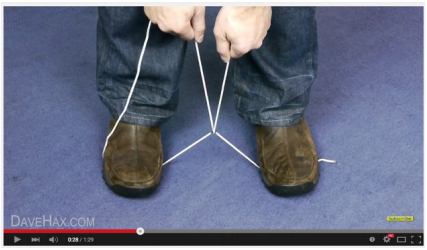

Illustration 10: "How to cut rope in an emergency"

Illustration 11: "How to make a 30 minute infinity scarf"

Illustration 10 above shows a screen capture from "How to Cut Rope in an Emergency" displaying its simple and straight forward style. The same search term (“how to”) on BuzzSumo, which shows the most shared content on Facebook, returns an equally large number of results. The top result, containing the entire search term, is the blogpost "How to make 30 Minute Infinity Scarf" (Waliczek-Raczka, n.d.). The post describes how to make your own scarf using only your hands and a ball of yarn. As can be seen in illustration 11 this video is also simple in form, only showing a pair of hands performing the task that the video is supposed to teach its viewers. BuzzSumo shows this blogpost to have almost 1 million shares on Facebook, again illustrating the potential virality of practically useful information.

Chang, Yu & Lu (2014) studied motivations for participating in a Taiwanese social network based around cooking food. The network is based on sharing recipes

and cooking tips. They found that post popularity increased with usefulness. Posts rated as more useful by users were liked and shared more than others. Posts with many likes and shares were also perceived to be more trustworthy and more informational than posts with few likes and shares. This popularity then encourages more sharing of useful content as there is a clear demand for it, and this content receives high amounts of likes and shares.

On online marketplaces like Ebay and Amazon user reviews play an important role. User reviews are often found beneath the product on a website, and contains the experiences of someone who has purchased the product in the past. The review may include specific information about the product's shortcomings or benefits, a recommendation to buy or not buy, and often a rating system. The usage of user reviews is motivated by the desire to decrease decision time, and the possibility of making a more informed decision with a more favourable outcome (Schindler & Bickart, 2005). These reviews are a form of electronic WOM that occur between people who may have absolutely no connection through any social network. This information is provided through very weak ties, requiring no two-way communication between sender and receiver, yet many consumers base their decisions on it. Over 60% of consumers look at online reviews before making a purchase decision (Schindler & Bickart, 2005). Liu and Zhang (2010) show how user reviews have a big impact on consumers willingness to buy. User reviews that are perceived as useful greatly influence consumers' decision to purchase. They found that the experience consumers have with online user reviews are mostly positive, and are therefore regarded as trustworthy wether they recommend purchasing or not.

Practically useful information in online content is highly valued. It is information that can teach us a practical skill or help us make a decision. It has been used with great success on internet shopping sites by allowing users to post reviews of individual products. Potential buyers actively use these reviews, and consider them highly trustworthy. The rise of content marketing is hinged upon the value of useful information. Content marketing should provide informational value to its receivers above any sales pitch, and yet it is a very profitable way of utilizing the popularity of this type of content.

2.5 Social Currency

The idea of social currency is built on the assumption that what we give to another person, be it an object or a piece of information, reflects back on us. In other words the content of a message reflects back on the sender, revealing information about the sender as well. Sharing information that will enhance the sender's reputation and image may also provide the sender with social currency. This process will naturally motivate a certain amount of self censorship, rarely do we want to appear in a negative light, but it may also promote spreading information that puts the sender in a good light. Individuals are more likely to share positive information about the self than negative information in social media (Qiu, Lin, Leung, & Tov, 2012).

Social media is full of self-sharing posts. Blogs have become popular for their personal form of communication, and on Facebook and Twitter people write about their thoughts, actions, meals etc. Young people, especially, tend to disclose more information about the self in online environments than in the offline, face-to-face world (D. Liu & Brown, 2014). This suggests that many of us, if not all, have an innate desire to share ourselves with others. It is also often assumed that the picture users present of themselves in social media is a highly polished image that does not give any true insights into users real personality. However this may not be the case, as research suggests that user profiles on SNS's may in fact provide sufficient information to characterize user personalities (Back et al., 2010). In a 2010 article Back et al. reports that while researching ideal self image on SNSs versus the real personality of American and German students they found that the self image users presented in SNSs was similar to the personality evaluation conducted in person by the researchers. This means that even though we tend to share only the positive parts of our lives in social media, the receivers of this information are still able to judge our personality accurately.

ZDNet reports that social media sharing is driven by ego (Brown, 2013). Referencing research by a social media analytics company Brown's article highlights the high number of shares scientific articles often get in social media. The researchers compared shares with actual clicks on the shared links, and found that for some content, like scientific articles, share numbers were dramatically higher than the amount of clicks on the shared link. That means that science articles are shared even though the sharers followers/friends rarely reads them. On the other hand they found that articles about sexual health receives a high number of readers, yet few shares.

This suggests that sharing scientific articles is based on a desire to appear knowledgeable above the desire to spread information. The small share numbers, versus high reader numbers, of sexual health articles suggest that this subject, even though many find it interesting, is perhaps too embarrassing to share with friends and followers. To share an article like that may put the sender in a bad light as receivers might assume that he/she struggles with sexual health. Sharing information reflects back on the sharer and, according to the article, the need to improve social standing among friends and network outcompetes practical usefulness as motivation for sharing.

Research by Tamir and Mitchell (Tamir & Mitchell, 2012) indicate that sharing information about oneself, and showing off skills, ideas, and opinions, makes up 30-40% of human speech output. In their article *Disclosing information about the self is intrinsically rewarding* they argue that sharing information about the self is associated with increased activity in the regions of the brain that release dopamine, and are essentially the brain's "reward" center (Alcaro, Huber, & Panksepp, 2007; Tamir & Mitchell, 2012). Their research subjects were much more inclined to answer questions about themselves than about others, and they showed increased activity in the brain regions associated with reward. When subjects were made aware that the self information they shared would be re-shared with a third person dopamine levels rose even higher. This research exhibits the value reflecting on ones own actions, thoughts and ideas, as opposed to another person's, may have to us. Research subjects were even willing to give up monetary rewards for the chance to reflect about themselves, and then sharing their thoughts with another person. Thus demonstrating that simply sharing ones thoughts and ideas are acts that provide us with instant gratification.

Cheung and Lee (2012) assumed that information sharing was motivated mainly by egoism. They investigated the online community OpenRice.com, a Hong Kong based social network consisting of user contributed restaurant reviews. They found that users who posted reviews often had self serving motivations. The research was carried out with Hong Kong Chinese participants stating that the desire to increase ones reputation, get recognition for skills or experience, and expected returns in the future are major motivations for sharing. However they also found that the feeling of belonging, or citizenship, in a group was an even stronger motivational factor within this community, demonstrating that motivations may change based on community and culture.

A survey from News York times reveals the motivations behind content sharing in social media. 94% of 2,500 medium/heavy online sharers share content because they carefully consider how the information they share will be useful to the recipient. 84% share because it is a way to support causes or issues they care about. 78% share information online because it lets them stay connected to people they may not otherwise stay in touch with. 73% share information because it helps them connect with others who share their interests. 69% share information because it allows them to feel more involved in the world. 68% share to give people a better sense of who they are and what they care about (New York Times, n.d.).

Boyd, Gelder and Lotan (2010) studied how and why twitter users retweet. They found that seeking validation is a common motivation for retweeting. Retweeting is the act of taking someone else's tweet and sharing it with ones own followers. In this way a specific tweet can be spread to many different users and social groups on Twitter, similar to the way content is shared and re-shared on Facebook. They gathered statistics from over two hundred thousand retweets to map the established conventions of retweeting, but also asked active Twitter users about why they retweet. They naturally received many different answers, yet a number of them appear to be motivated by a need for self enhancement or a desire to be seen in a good light. One reason was "to publicly agree with someone". This is a way of showing support for an issue or person, but in the act of retweeting, the tweets content reflects back on the retweeter as well. Publicly agreeing with someone relates to another reason for retweeting: "to validate someone's thoughts". Here Boyd et al. cites Twitter user *@amandapey* who states that "… sometimes someone else just says it better", meaning that by retweeting she can make someone else's words her own. Hence retweeting allows users to make themselves appear smart, clever, funny, up to date with current events etc. and build social currency.

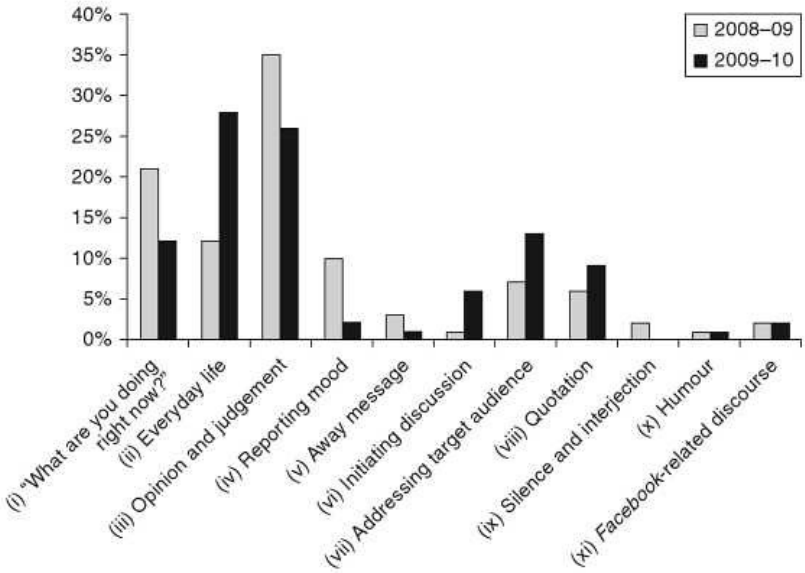

Illustration 12: Status updates on Facebook. Results from a survey analysing Facebook status updates. Lee, 2011

Research on consumer behaviour and WOM connected to brands may provide an idea of the motivations behind generating WOM and spreading information. Fiske and Sedikides, cited by Wojnicki and Godes (2008) establish that the tendency to self-enhance is one of the most powerful human social motivations. Further research by Wojnicki and Godes show that consumers' motivation to generate WOM about brands is influenced by self-enhancement. This motivations stems from a need to communicate ones expertise to those around us. Their study found that negative consumer experiences generate more WOM than positive ones. Participants in the study read one of several different stories about consumer experiences at restaurants. Some experiences were positive, and some negative. Their results show that WOM on restaurant experiences increased as the experience was more negative. However they also found that people who have self proclaimed expertise about a subject, in this case restaurant food, were more likely to generate only positive WOM, meaning they were more likely to stay silent about a bad experience than a good one. On the other hand people with little expertise were equally likely to generate WOM wether the experience was good or bad. Hence they concluded that expertise is related to positive WOM, because it allows people to demonstrate their skills and knowledge. Wojnicki and Godes further ascertained the connection to self enhancement by having participants write an email to a friend about the made up restaurant experience. In

emails reporting negative events the participants made a point out of saying that the restaurant was not their choice, and vice versa in the positive events. Thus the participants would demonstrate their knowledge and good taste regardless of a good or a bad experience. Their research show that self-enhancement is an important factor in generating brand WOM. One that can likely be transferred to situations without specific brands as well because the tendency to self enhance is such an important motivation for social interaction.

2.6 Facebook as a tool for virality

Facebook is arguably the worlds most popular social networking site (SNS) and it is the most used tool for online sharing (AddThis.com, 2014). It rose to power in 2004, emerging from Harvard University in the USA. Facebook quickly beat MySpace out of its number one position when it was made available to everyone worldwide in 2006 (Ellison & Boyd, 2007) Since then Facebook has become a huge part of our popular culture. The controversial story of its creation has even inspired the making of a Hollywood movie called "The Social Network" (2010). With over 747 million active users worldwide (“Facebook Newsroom,” n.d.) it is a huge force in the SNS world and its potential power over the flow of information is vast. In late 2013 there were 2,2 million Norwegians users on Facebook, that means that close to 50 % of the Norwegian population have a Facebook account (“Kampanje.no,” 2013).

Granovetter (1973) described relationships between people as being made of either *strong* or *weak* ties. Being bound by a strong tie means that two people share much of the same network and can be said to have a close relationship. A weak tie is a tie to someone outside of ones regular contacts, like a business acquaintance. He assumes that a community or social network consists of people bound together with strong ties, and that the only connections between these groups or networks are made by weak ties. Granovetter describes these weak ties as bridges between networks, and it is only along these bridges that new information can make its way into a community. Close friends will most likely have access to the same information that you do, while a more distant contact can provide new information long bridges. This means that weak ties are essential for the diffusion of WOM. If not for weak ties Granovetter's theory says that any piece of information would be stuck within a group or community, and could not spread outside of this closed network. By travelling along the weak ties, or

bridges, information can reach more people, however it will travel slower across weak ties than the strong ones.

Research into job recruiting reveals that weak ties are the ones that often result in a new job (Granovetter, 1983) It is important to note that weak ties may exist between people who are already part of the same social circle, thus their weak tie can not function as a bridge for new information. Only when the weak tie exists between two networks that are clearly separated will it become a bridge for useful information. However strong ties are still useful. Information diffusion via strong ties usually happen in a closed network, yet Granovetter notes that the speed, credibility and influence of this information can be much greater than that flowing through weak ties (1973). He argues that it's mostly through weak ties that networks open up for influence from each other and it is in this way that new ideas may diffuse in a population.

3 Method

In this chapter I will describe the approach used in this thesis to attain valid results from my content analysis. Initially the chapter will deal with scientific methods in general before detailing the specific method used in this thesis. Elaborating on the method used and the selection to be analysed will allow me to address the many methodological challenges that occur in selecting units for analysis, internationalizing, coding, and reaching valid generalisable results.

The aim of this thesis is in part to replicate Berger and Milkman's research into the factors that allow online content to go viral (2012). Secondly I set out to test wether their results were generalisable to a Norwegian cultural context. Scientific research may be seen as big puzzle in which many small pieces make up the big picture. In such a view this thesis may be seen as a supporting piece to Berger and Milkman (2012), further testing their results for generalisability by conducting a “light” version of their research in a different cultural context. Hence the research method used is the same as in the original research with a similar selection of units. Major differences will occur in the size of our unit selections and the ability to include multiple control variables. In my, much smaller, research I will include only the most vital variables mapped out in Berger and Milkman (2012). However, if their results are generalisable to different cultural contexts, I can expect to achieve very similar results, even with my less comprehensive analysis.

Scientific research methods are plentiful and varied. Berger and Milkman uses the quantitative content analysis, however they also include qualitative methods in addition to this in what is called a method triangulation. Triangulation in this context means the use of two or more scientific methods in order to check and validate results. Qualitative research methods enable researchers to collect and process data which are not easily quantifiable or measurable. As opposed to quantitative methods they are not concerned with statistics or numbers, but can be used on more abstract values (Schrøder Kim, Kirsten Drotner, Stephen Kline, 2003). The qualitative methods are criticised for lack of accuracy and generalisability. On the other hand, proponents of these methods say that qualitative research enables us to explore areas where exact measurements are impossible, areas that are less accessible to the quantitative

methods. That means that qualitative research allows for results that are not necessarily generalisable on a larger scale, but may still be a part of valid research.

As for the choice of method in this thesis I have opted to utilize quantitative content analysis using Neuendorf's *The Content analysis guidebook* (2002) as my main source on the method. It is the main method used in Berger and Milkman's research (2012), and it will allow me to check their results, and see if they are generalisable to a different cultural context.

3.1 Choice of method

The quantitative content analysis is a method for achieving a numerical summary of certain specified content or "...the systematic, objective quantitative analysis of message characteristics" (Neuendorf, 2002). To put it as simply as possible quantitative analysis means counting things. This means that the units in a quantitative analysis must be quantifiable using numbers so that we can easily count them objectively. This methodology allows for a large amount of text to be analysed while achieving generalisable results. My research question entails counting the presence of Berger's virality traits in shared Norwegian online newspaper articles, which is why I find quantitative content analysis to be an appropriate method to use in my research.

The goal of most scientific research is usually to establish wether there is a causal relationship between variable A and outcome B. That means that if we as scientists suspect that variable A is the cause of outcome B we may use quantitative methods to see what happens if we manipulate variable A, or we may try to identify and measure all variables that might cause outcome B. In the case of my own research I wished to discover if high arousal emotions, practical utility and social currency causes sharing in social media. More specifically I wanted to replicate previous research to test its generalisability.

A quantitative analysis is done with the help of clearly defined variables, a selection of units where we suspect those variables to be present, and a coding form where we input units and variables. That allows us to count the number of units where variable A and outcome B occur in tandem, and we start to see if a cause and effect relationship between the two is plausible. The goal of content analysis is to describe message characteristics or, in the case of my own research, to *identify relationships* among message characteristics (Neuendorf, 2002). I.e to investigate wether or not

there is a relationship between high arousal emotions, practical utility and social currency, and sharing in social media. Many different types of content analysis are described in literature on this subject, however I am mainly concerned with the *predictive* kind. Predictive content analysis aims to predict the outcome or effect of a given piece of content/information. This method allows us to predict how a message will be received by its audience and what effect it will have. Thus it fits with my own research question of how Berger and Milkman's identified variables (2012) affect sharing. It should be noted that a content analysis such as this does not aim to give a definite answer to the causality (cause and effect) of its subject matter, but to identify relationships that may be further explored. Results attained may be replicated to show generalisability and a plausible, but not certain, cause and effect relationship can be established.

Within content analysis we talk about two types of content that can be measured. These are *manifest* and *latent* content. Manifest content are the things that can be easily observed and counted. Latent content entails a deeper meaning that requires a level of interpretation to be counted (Neuendorf, 2002). The early definition of content analysis included only the manifest type of content. These are the variables that can be easily counted such as the number of words in a newspaper article. Later, latent content found its place within the methodology meaning that a variable such as *news theme* can be measured. We know that there are certain indicators (content, wording, news angle) that may tell us which theme a news article belongs to even though the variable itself is not directly countable. Thus we see that even though latent content is not directly measurable it can be measured by looking for predetermined indicators that can be counted. My analysis includes both manifest and latent content, as well as a level of qualitative interpretation needed to measure variables of emotion, practical value and social currency. The challenges of measuring these qualitative variables will be discussed further in chapter 3.2.

3.2 Operationalization

Neuendorf (2002) describes the operationalization of a research project as *how* you measure the things you want to measure. An exact and precise operationalization will allow me to know that my analysis and chosen parameters are valid for my research question, increasing internal validity of the project. A vital part of operationalization is

the development of a coding scheme (Neuendorf, 2002). A coding scheme is where the measurements and counting is done. It consists of separate columns for all variables to be measured, so that any given unit in the selection can be identified and paired with its individual results.

In the case of my own research many of the variables are predefined by Berger and Milkman (2012). In replicating parts of their research I must make use of the same variables with identical definitions. The goal of my research is that of Berger and Milkman, to determine wether there is a link between the predefined variables and the sharing of news articles, although only Norwegian news articles in my case. The most important variables to explore in this case are the number of shares, emotional value, practical value, and social currency of each unit in the selection.

My coding scheme should include the above variables and a unit identifier at a minimum. This allows for the identification of each unit as well as providing the measurements of the most vital variables. In addition to these I will add columns for unit number, article headline, date/day of collection, date of last update, word count, newspaper, and URL. These variables will allow me to see wether sharing can be linked to specific days of the week, newspapers, article length, or time since the article was last updated. Adding the URL will provide simple access to the articles at a later date either by me or by other researchers.

Columns for news theme will be added. Specifically politics, celebrities (typically gossip articles or articles that lean heavily on celebrity presence), science, sports, arts (kultur), international news (all news from outside Norway), health, economics, and other (for any article that can not be classified into any of the other themes). Coding articles for news theme variables means that there are only two possibilities for each variable, an article will either show theme traits or it will not. Thus I can code the articles with the number 1 if it shows traits of a certain theme, and 0 if it has no traits of the theme in question. As with many media texts online news articles may inhabit traits from several different news themes, and the coding scheme will reflect this, showing the value 1 for every theme that is present in the article. Lastly the main variables will get their own separate columns in the coding scheme. These are practical value, social currency, anger, anxiety, sadness, joy, and awe. These are the variables whose effect I am the most interested in.

To attempt to measure the degree to which these variables are present in each article they will be coded using a Likert scale with numerical values from 1 to 5

(discussed further in chapter 3.1.2). This method is identical to the one used by Berger and Milkman (2012). They relied on manual human coding to evaluate the degree of emotionality in each article, in addition to using automated sentiment analysis to decide wether articles were mainly positive or negative in emotionality. The automated sentiment analysis looked for, and counted, predefined words in the articles. These were emotionally charged words that had either positive or negative connotations. This resulted in articles being ranked as *mostly positive* or *mostly negative*. That then allowed Berger and Milkman to compare automated results with those obtained from the human coders. My own research is limited to use of human coders and will therefore replicate only this part of Berger and Milkman's research.

By use of the Likert scale it becomes possible to see which of the variables have the biggest presence in shared articles. I can also examine instances where an article contains more than one of the above variables to see if it's possible to determine which variable is the most important in promoting sharing. In this way I can take my selection of articles that have been shared on Facebook, and count/measure the presence of Berger and Milkman's virality traits to see if they are valid in a different cultural context as well.

3.3 Selection

To conduct a content analysis it is necessary to make a selection of units that is to be included in the study. This selection is done based on the previous operationalization that has defined how we wish to answer the research question. A unit is a message or message component from which different variables can be counted and measured. Units can be words or themes or visual cues, or anything that is part of a mediated message. These units can be divided into the subclasses of *units of sampling*, *units of data collection*, and *units of analysis* (Neuendorf, 2002).

In the case of my own research the units of sampling are online news articles that have been shared on Facebook. The units of data collection, in this case overlapping with units of analysis, are the 2-3 most shared articles every day in the time period of collection. The total number of articles in the analysis are 108, collected between 21.10.2014 and 12.12.2014.

The choice of newspaper articles was made based on the method used by Berger and Milkman (2012). To replicate their study of New York Times articles in the

best way, while adapting the study to a Norwegian cultural context, I collected online news articles from three different Norwegian newspapers. The choice of news articles, over other media content, to look for virality traits has other advantages as well. Heath et al. (2001) report that when it comes to brand communication there is one group that is significantly less active in conducting word-of-mouth than others, namely loyal customers. Loyal customers of a brand will mainly engage in negative WOM if they feel dissatisfied with a product, but are less likely to engage in positive WOM. Thus news articles may be the most neutral content to use for this purpose. News articles will not be affected by any sort of brand loyalty from customers. Although customer loyalty towards newspapers may affect the sales of paper A vs paper B, it should presumably not affect the underlying reasons for sharing. The goal is to eliminates the marketing factor. Sales of a product will affect WOM, but online news is not a sellable product in the same way. The choice of news articles may also strengthen internal validity in comparison to other types of shared content (see chapter 3.7).

Further, researchers may benefit greatly from using social media as tools for analysing conversations in that they offer easy access to a potentially very large number of conversations. Most word of mouth happens offline in everyday conversation (Berger, 2014), however when researchers need to count and measure these conversations Facebook and other online places of communication have an obvious methodological advantage. It's important to note that the results of this thesis, as well as those of Berger and Milkman, are not directly generalisable to other types of media content (images, videos etc.) even though we may assume that the mechanics of sharing are very similar regardless of content type. The generalisability of the study will be discussed further in chapter 3.4.

3.3.1 Collecting data

The selection of articles for analysis were made using the online service BuzzSumo.com, which surveys the number of Facebook shares for any website. By entering the URL's of a selection of Norwegian online newspapers I can see which articles have been shared the most during a day and select a number of them for analysis.

3.4 Variables

Neuendorf (2002) describes four recommended techniques for identifying and selecting variables for content analysis:

1. A consideration of universal variables
2. Using theory and past research for variable collection
3. A grounded or "emergent" process of variable identification
4. Attempting to find medium specific critical variables.to

I have utilized technique number 2 to select and define my variables. To replicate the research of Berger and Milkman (2012) on a level befitting a masters thesis I had to downscale the numbers of variables somewhat, and rely solely on human coders. The main results found and presented in their research were the viral potential of high arousal emotions, practical utility, and social currency. It follows naturally that in order to replicate their research I should use the same variables defined in the same way. These variables are thoroughly accounted for in chapter 2, but will be briefly touched upon again in this chapter.

The high arousal emotions *anger*, *anxiety*, *joy*, and *awe* were used in Berger and Milkman's research, which were found to be positively linked to virality. *Social currency* and *practical usefulness* were found to have the same positive link to sharing. One emotion that is not a high arousal emotion, but was included in Berger and Milkman's research is *sadness*. Sadness is classified as a low arousal emotion which would give it the opposite effect of high arousal emotions if Berger and Milkman's theories are correct. Sadness should have a negative impact on sharing. The low arousal emotion was included to function as a control variable. That way they could test the theory that the research was built upon. If the theory is that high arousal emotions cause sharing, and low arousal emotions do not, then sadness should not be present in their data collection. Hence I included sadness as a variable in my analysis as well.

In addition to the above mentioned variables I added several others:

- Unit number – each collected unit was assigned an identifying number.
- Collection day/date – day and date of collection for each unit.
- Article headline – the headline of the news article.
- Newspaper – the name of the newspaper from which the unit was collected.
- Last updated – date of last update to the article.

- Word count – number of words in the article.
- URL – the direct URL to the article.
- Facebook shares – the number of Facebook shares at the time of collection.

The above variables were used to easily identify and retrieve articles, as well as to see if any patterns emerged over time that could point to variables left out of previous research. As all the articles in my selection were among the most shared on the *day of collection*, registering the day of the week could reveal a pattern that, if found, might indicate that certain days of the week are more suitable if virality is the goal. The *newspaper* variable might point out if any one newspaper is shared more than others although to be of any great significance this should also be compared to total number of readers. Including the date of *last update* means that I was able to pick out an article that doesn't follow the usual life cycle of news articles. In my selection I found that articles reach their maximum number of shares the day after publishing and are quickly replaced the next day. Articles not following this pattern were analysed with care to see if new variables were needed to explain the effect.

I also saw the need for variables that described the theme(s) of the articles. This allowed me to discover if any one theme has a higher likelihood of being shared than others. They were used to see if any patterns would emerge that might call for a rethinking of Berger and Milkman's virality traits (2012). Theme variables used were:

- Politics
- Celebrities
- Science
- Sports
- Arts (kultur)
- International news
- Health
- Economics
- Other news

There is a significant difference between my own research and that of Berger and Milkman in the number of control variables used. Due to lack of resources I was unable to include variables such as *author fame*, and the articles *position and appearance* on the website. Automation was used to measure these variables in the

original research. In addition to this they applied automated sentiment analysis on their selected articles to establish a general level of emotionality, i.e. mostly positive or mostly negative emotions. However their main findings were the virality of high arousal emotions, practical utility, and social currency which was measured by human coders using a Likert scale in the same way that I have employed it in my study. If this method reveals the same results as Berger and Milkman's (2012) it will show a degree of generalisability in both their results and mine.

3.5 Coding

Coding involves the development of a codebook. The codebook must describe the coding process in such detail that another independent researcher would reach the same results if the research was duplicated (Neuendorf, 2002). Development of the codebook should happen *a priori*. A priori design means designing the analysis and defining variables and measurement units before the analysis process begins. This is done by operationalizing the research question and/or hypothesis, and developing and testing the codebook and coding scheme prior to doing the actual analysis (Neuendorf, 2002). All decisions about variables, coding, measurements must be made before collecting units so as not to colour the researcher's observations. Accompanying the codebook should be a coding scheme stating the different variables to be measured in each newspaper article, and a table/scheme to manually fill in with counts of each variable. The units in my selection have all been coded and analysed by myself, so to attain a higher degree of reliability I have used an independent coder on a subsample of my selection. In any content analysis project it is important to test the codebook and coding scheme on independent coders, and make necessary changes until they reach the same results and understanding of the codebook as the researcher (Neuendorf, 2002). This trial process is done to achieve intercoder reliability, meaning that different coders will reach the same results using the same codebook and coding scheme (Neuendorf, 2002). This process should be repeated until a high intercoder reliability is reached and the codebook is optimized for both reliabiltiy and validity.

In Berger and Milkman's research (2012) manual coding was used to ascertain the degree to which different emotions were present in their selected articles, and I chose to replicate this method. They asked their coders to look up the wikipedia article for each of the emotions anger, anxiety, sadness, joy, and awe, and subsequently rate

the amount of emotion present in each article they read. The emotions were to be rated using a Likert scale from 1 - 5 where 1 means that the emotion in question is not present at all, and 5 means that it is clearly present. The numbers 2, 3, and 4 describe states were the emotion or category is partly present. I chose to follow the same procedure to develop my codebook. Emotions were defined by writing a short summary of the Norwegian wikipedia articles on each emotion. Social currency and practical usefulness were defined using Berger's own research (Berger, 2013).

3.5.1 Codebook

The following chapter will account for the codebook used in my research in its complete form:

Below are listed categories and emotions that may be present in a news article. These are to be coded using a Likert scale ranging from 1 to 5. The scale's purpose is to measure the degree to which each category or emotion is present in the article. E.g. if the emotion anger is not present in an article it should be coded with the number 1, if anger is clearly present , the emotion permeates the text, it should be coded with the number 5. The numbers 2, 3, and 4 describe states were the emotion or category is partly present. Follow the table below.

Not present				Clearly present
1	2	3	4	5

Practical Value: Does the article contain practically useful information that the reader can directly benefit from having? Examples: “How to write a resume” or “How to get along with your boss”.

Social Currency: Information sharing can be guided by self interests. That means that we may share something that puts ourselves in a good light and makes us appear smart and up to date. By sharing the article we show that we care, that we follow the current state of affairs, have a good sense of humour etc.

Anger: To which extent does the article evoke anger in the reader? E.g. articles about animal cruelty often evoke anger in readers.

Anxiety: To which extent does the article evoke a concern for possible future consequences of the subject matter.

Sadness: An emotion characterized by disadvantage and/or loss.

Joy: Satisfaction and/or fun is present in the article.

Awe: Describes a sense of respect, surprise, joy in experiencing something bigger than one self. In the case of newspaper articles you may think of it as the "wow factor". If the articles subject matter makes you think "wow" it contains this emotion.

3.6 Analyses

Statistics that are collected through a quantitative content analysis can be analysed in different ways. When analysing units by looking at only one variable the analyses are called univariate, bivariate when there are two variables, and multivariate when there are more than two variables (Neuendorf, 2002). I will present my results in univariate and bivariate analyses. The dependent variable *Facebook shares*, as well as the independent variables *anger*, *anxiety*, *joy*, *awe*, *social currency,* and *practical value* will be analysed with their mean (average), median, range, and mode values. The median expresses the middle number in a selection, the range shows the range from lowest to highest value, and the mode is the value that appears most frequently (most likely to be sampled) (KhanAcademy, n.d.).

However to assess the relationship between the variables whose virality I wish to measure, and number of shares, it is also necessary to conduct a bivariate analysis. The relationship between these variables and the number of facebook shares they have received will be analysed and a correlation coefficient will be established. This allows me to calculate the statistical significance of my results which is what tells us if there is a plausible relationship between variables, i.e if the value of one variable rises then the other variable should rise as well. Otherwise there is not a strong statistical

significance to the numbers (Sauro, 2015; Fonseca, 2013). The logical way to assess this relationship is to compare the values of the variables said to affect sharing with the total share number for each unit in my selection. However a problem arises with this method. A unit that has a low level of one variable should presumably have low share numbers, yet this might not be the case because units may contain more than one variable at a time. Thus I saw the need to combine dependent variables into one, which can then be correlated to the share numbers and statistical significance may be established. This was done by simply adding the values of social currency, practical value, anger, anxiety, joy, and awe together while subtracting the values of sadness (supposed negative effect on sharing) to establish a *virality* value. See the example table below:

Practical value	Social currency	Anger	Anxiety	Sadness	Joy	Awe	**Virality**
2	+4	+5	+1	-2	+1	+1	**12**

This process allowed me to establish a general value of virality for each unit. The higher the virality number the larger the number of shares should be if Berger and Milkman's results (2012) are generalisable to my selection.

The goal of scientific research is usually to identify causal relationships (Neuendorf, 2002). That is how does action A relate to outcome B. The use of the virality variable allows me to identify a possible relationship between it and share numbers. Another goal of scientific research is to establish the time order of the dependent and independent variables, simply put: does A always come before B? In the case of my selection (newspaper articles) it is reasonable to assume that the values of emotions, social currency, and practical value are present in the article before it gets shared. Hence we may establish a plausible time ordered relationship as well.

3.6.1 Statistical significance

As accounted for in the above chapter a *virality* variable was calculated in order to determine wether my results have statistical significance. Results indicate a relationship between the virality variable and sharing with p-value = 0,001, and a correlation coefficient of 0,23. The low p-value indicates a relationship that is not due to chance (Sauro, 2015). There is only a 0,1 % chance that the results are completely

random and have no statistical significance. The correlation coefficient may have a value between -1 and 1. A value between 0 and -1 indicates a negative relationship, while a value between 0 and 1 indicates a positive relationship. The closer to the two extremes the value lies the more pronounced is the relationship (Rumsey, 2011). My coefficient value of 0,23 indicates a weak but positive relationship between the virality variable and sharing. This again points to a positive relationship between Berger and Milkman's virality traits (2012) and sharing in social media. The weakness of the correlation coefficient is likely due to the fact that all the articles in my analysis had been shared. Including articles that had received no, or few, shares might strengthen the correlation. This will be covered further in the discussion chapter.

3.7 Validity, generalisability and reliability

Reliability, *validity* and *generalisability* are terms used to describe the general quality of research. Reliability refers to the extent to which the results of the research are the same on repeated trials. In quantitative analysis this means that a measure should be able to produce the same result more than once, and by more than one person (Neuendorf, 2002). Validity describes how relevant the research method used is to answering the research question. In other words, are we measuring what we want to measure? The generalisability of a study represents how well the study's results can be said to apply to similar situations at different places and times (Neuendorf, 2002).

Validity and reliability are interlinked in that a valid measure is also reliable. If a measure returns accurate results about what we actually want to measure then it should also be replicable, and yield the same results upon repeated trials. However, a reliable measure is not automatically valid. Results can be replicable and reliable without corresponding to the researcher's intentions and research question (Neuendorf, 2002). Therefore a good study should be both reliable and valid.

3.7.1 Validity

Face validity is a term that describes the validity of a study “on the face of things” (Neuendorf, 2002). This is a way for the researcher to take a step back from the research and evaluate the measures used as objectively as possible. In the case of my own research the face validity of measuring emotions may seem low. Emotions are

highly subjective notions that are not easily quantifiable. However, based on previous research on virality, and the effects of high arousal emotions (both accounted for in the chapter on scientific theory), it is reasonable to assume that these emotions are linked to sharing if they are found in the selection. Face validity is established through the results of previous research on sharing, and the similar scientific method used in Berger and Milkman (2012).

Internal validity describes the extent to which the execution of the research project answers the original research question, or wether or not we are measuring what we actually want to measure (Neuendorf, 2002). The internal validity of my thesis is strengthened by operationalizing the research question thoroughly. The research question asked in this thesis is *Does emotional selection, social currency, and practical utility affect sharing in social media?* In other words, are Berger and Milkman's defined traits of virality (2012) really causing sharing in social media? Other variations of the RQ could be *How does emotional selection, social currency, and practical utility affect sharing in social media,* or *To which extent does emotional selection, social currency, and practical utility affect sharing in social media?* These last two variations rely on finding a measure of how much the variables affect sharing. This, however, cannot be answered without knowing all possible variables that may affect sharing, and this we do not know. Instead my RQ is intended to answer simply wether or not the predefined variables affect sharing. To answer this question one needs to measure the presence of the variables in content that has been shared. Many types of content could be sampled for this. Berger and Milkman opted for news articles in their research. To best replicate their method and test the generalisability of their results I chose the same type of units to analyse.

The *replicability* of my research, that is how well my research can be replicated with the same results in a different setting (Neuendorf, 2002), is also supported by having valid measures. The existence of successful research replications supports the generalisability and validity of the results. In this case I am replicating previous research, testing the generalisability of its results. If my results are similar the process of replication provides my own research with enhanced generalisability as well because the method is proven to work on different selections.

3.7.2 Generalisability

The purpose of generalisable results are to transfer their meaning to other units that were not part of the original research. My units are news articles that have been shared in social media, meaning that to be generalisable my results should be transferrable to articles outside of my selection as well. My method and results are both similar to those of Berger and Milkman (2012) which enhances this study's generalisability, but does not make it absolute. The small selection of articles means that we can not make assumptions about the total number of Norwegian news articles, yet my results, combined with Berger and Milkman's, will contribute to our understanding of the processes behind sharing.

Another factor to generalisability is how well the results can be applied to, not just other selections of news articles, but to other types of content that is shared in social media. The research I have based this thesis on (chapter 2) explores many different types of content and revolves around the general effect that my variables may have on sharing. It is however not possible to generalise the results to other types of content a swell. We may assume that using images or videos or something else instead of news articles would provide similar results, but we can not be certain, which means that my results are not generalisable in this way.

3.7.3 *Intercoder reliability*

Reliability describes the extent to which measures are trustworthy. A researcher has reliable results if repeated trials of the same method and selection provides the same results. When relying on human coders the *intercoder* reliabilty is the man reliabilty factor to test (Neuendorf, 2002). Intercoder reliability refers to the difference in measures done by two or more coders. If several coders end up with the same, or very similar results it means that the study has high intercoder reliability. It may also attest to how well operationalised the codebook is, as the codebook provides the guidelines for coding. The coding scheme and codebook must be usable by more than one person or it becomes an expert analysis instead of a content analysis (Neuendorf, 2002).

With my own research, relying on subjective measures of emotion, practical usefulness, and social currency it is vital to establish the reliabilty of such measurements. These variables are measured on a Likert scale ranging from 1-5. The Likert scale, in this context, is only reliable if multiple coders agree on how to

measure emotions, practical usefulness, and social currency. Coders should be able to reach the same or similar values of variables in selected articles for the Likert scale to produce reliable results. Neuendorf (2002) asserts that at least two coders have to agree on the measurements, and the results should offer a correlation coefficient of 0.80 or greater. The correlation coefficient should be applied to, and reported for, each variable instead of averaging values across variables. This latter approach may hide weak reliabilty of one variable behind other strong reliability values.

There are are two main ways of assessing intercoder reliability, *agreement* and *covariation* (Neuendorf, 2002). Agreement is used to evaluate the degree to which coders can agree to the precise values assigned to each variable. Covariation is used to measure wether the values assigned to each variable go up and down together, without having to be the exact same values. When assessing agreement on nominal values *range agreement* may be used (Neuendorf, 2002). That means that an agreement can be counted when coders come within a certain distance of each other. The Likert scale ratings do not necessarily have the same distance between them (the range from 1 to 2 may not be equal to the range from 3 to 4), and coders may perceive these measurements differently from each other. Hence this is well suited to my material as values assigned to emotional variables by separate coders are expected to vary although they should be in close range of each other. This means that I have counted agreement between coders if they registered values within a ± 1range of each other on the Likert scale: From this I produced a raw percentage agreement number for each article in the subsample. Covariation has also been calculated for each sampled unit to see if coders assigned high and low values in tandem, but not necessarily the exact same values. A correlation coefficient is reported in values from -1 to 1 where -1 means there is a perfect negative correlation, 0 means there is no correlation, and 1 means there is a perfect positive correlation (Neuendorf, 2002).

The subsample selection, that is the selection of articles coded by two coders to measure reliability, was chosen at random. A random number generator was used to choose 11 articles out of the 108 total. Neuendorf (2012) recommends random sampling of at least 10% of the total number of selected units to measure reliability. Table 3 represents the results of the subsample analysis. The coders are represented with coder A (myself) and coder B (independent coder). Agreement is indicated with either A (agree) or D (disagree). All units received above 70% intercoder agreement. The correlation coefficients of all units are also high with ten out of eleven units above

0.70, and one at 0.56. All coefficients indicate a strong positive correlation between the two coders' assessments, asserting high intercoder reliability of the study.

	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
Unit number: 86							
Coder A	1	5	1	1	1	1	1
Coder B	1	4	1	1	2	1	1
Agree/Disagree	A	A	A	A	A	A	A
Agreement percentage	100						
Correlation coefficient	0,94						
Unit number: 30							
Coder A	1	5	1	1	1	2	2
Coder B	2	4	1	1	1	3	3
Agree/Disagree	A	A	A	A	A	A	A
Agreement percentage	100						
Correlation coefficient	0,86						
Unit number: 44							
Coder A	1	5	4	3	3	1	1
Coder B	1	4	3	3	3	1	1
Agree/Disagree	A	A	A	A	A	A	A
Agreement percentage	100						
Correlation coefficient	0,97						
Unit number: 60							
Coder A	1	5	5	1	4	1	1
Coder B	1	5	5	1	4	1	1
Agree/Disagree	A	A	A	A	A	A	A
Agreement percentage	100						
Correlation coefficient	1						
Unit number: 36							
Coder A	1	5	4	1	1	1	1
Coder B	1	5	2	1	3	1	1
Agree/Disagree	A	A	D	A	D	A	A
Agreement percentage	0,71						
Correlation coefficient	0,76						
Unit number: 10							
Coder A	1	4	1	1	1	1	1
Coder B	1	5	1	1	1	1	1
Agree/Disagree	A	A	A	A	A	A	A
Agreement percentage	100						
Correlation coefficient	1						
Unit number: 71							
Coder A	1	4	1	1	4	1	1
Coder B	1	3	1	1	3	1	2
Agree/Disagree	A	A	A	A	A	A	A
Agreement percentage	100						
Correlation coefficient	0,92						
Unit number: 88							
Coder A	1	4	1	1	1	4	4
Coder B	1	3	1	1	1	5	4
Agree/Disagree	A	A	A	A	A	A	A
Agreement percentage	100						
Correlation coefficient	0,94						
Unit number: 12							
Coder A	1	5	1	1	1	4	2
Coder B	1	4	1	1	1	4	5
Agree/Disagree	A	A	A	A	A	A	D
Agreement percentage	0,86						
Correlation coefficient	0,74						
Unit number: 9							
Coder A	1	4	2	1	1	1	1
Coder B	1	3	1	1	1	1	3
Agree/Disagree	A	A	A	A	A	A	D
Agreement percentage	0,86						
Correlation coefficient	0,56						
Unit number: 61							
Coder A	1	5	4	1	1	1	1
Coder B	1	5	3	1	1	1	1
Agree/Disagree	A	A	A	A	A	A	A
Agreement percentage	100						
Correlation coefficient	0,98						

Table 3: Intercoder reliability scheme showing intercoder agreement and correlation coefficients for subsample selection.

4 Results

In this chapter the variables of the content analysis will be presented with their corresponding results. The results and their implications will then be discussed further in the analysis chapter.

Total number of articles	108
Average shares	4211
Range of shares	338 – 38076
Newspapers:	**Number of articles:**
Nettavisen:	28
VG:	43
Aftenposten:	37

Table 4: Summary

Table 4 above is a simple overview of the content analysis. 108 online news articles from Norwegian news sites Aftenposten, VG, and Nettavisen were included. Dagbladet was also included in the data gathering process, but had no articles in the top three shared articles on any day during the time period. Hence Dagbladet does not appear in any of the coding schemes. The number of shares ranged from 338 all the way to 38076 with an average share number of 4211. Of all the shared articles VG had the biggest presence with 43 articles, Aftenposten followed with 37, and Nettavisen with 28 articles.

Top 10 placement	Unit number:	Article headline:	Newspaper:	Facebook shares:	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:	News genre:
1	83	Når ble det forbudt å irettesette ulydige barn?	Aftenposten	38076	3	**5**	3	1	1	1	**5**	Health
2	86	Nå er det forbudt å løfte katten etter nakkeskinnet	VG	32343	**5**	**4**	1	1	1	1	1	"How to"
3	58	Gilbert utestengt fra Gaza på livstid	VG	13763	1	**5**	**4**	1	3	1	1	Celebrities, Health
4	101	Flere tusen støtter Frodes Elkjøp-utbrudd	Nettavisen	13143	1	**5**	**4**	1	1	3	**4**	Economics
5	79	Alle andre får lov	VG	12224	1	**5**	**4**	1	1	1	3	Economics
6	91	Forskere mener E-sigaretter er svært kreftfarlige	VG	9342	**5**	3	1	1	1	1	1	Health
7	25	Du vil ikke tro hva NAV skrev i sms-en	Nettavisen	8518	1	**4**	1	1	1	**5**	1	Other
8	105	Kom som asylsøker, ble milliardær	Aftenposten	8495	1	**5**	1	1	1	**4**	**5**	Economics, Interview
9	40	- Jeg ler inni meg hver morgen	Aftenposten	8412	1	2	1	1	1	1	**4**	Arts (kultur)
10	102	Vi skaper et samfunn av drittsekker	VG	8392	1	**5**	1	1	1	1	**4**	Health, Economics

Table 5: The ten most shared news articles on Facebook from October 21st to December 12th, 2014.

Table 5 shows the top ten most shared articles in the content analysis. The numbers in bold print are where the articles scored either 4 or 5. This score means that the variable (emotion, practical usefulness, social currency) is strongly present in the article. The number of shares among the top ten varies greatly, from 8 392 at number ten to 38 076 at number one, yet all are well above the average in the time period which was 4 211 shares.

All but one of the newspapers included in the analysis are represented in the top ten. VG takes up half the list with 5 articles in the top ten, while Aftenposten takes up 3 spots, and Nettavisen has 2. Aftenposten is responsible for the top article which has a share number 9 times above the average in the time period. 8 out of 10 articles score high in the category s*ocial currency*, while none score high in *sadness* or *anxiety.* In terms of news theme, articles about health and economics take up the most spots in the top ten with the top article being a health article.

4.1 Results from each variable

This part of chapter 4 will present the variables one by one coupled with the results connected to each variable. First the results connected to the variables *practical value* and *social currency* will be introduced, followed by the emotional variables, and ending with results associated with *news theme*. For most of the chapter only articles scoring 5 (clearly present) on at least one variable will be presented in tables. The omission of articles scoring 4 has been done to simplify the tables as the results of the analysis can still be well represented along with share number to demonstrate the possible link between the variables and sharing.

Variables:	Number of articles with a score of 4 or 5:	Average shares:
Social currency	74	4690
Awe	24	4914
Joy	24	3476
Anger	22	4738
Practical value	17	5550
Sadness	12	2708
Anxiety	6	3230

Table 6: The emotional, practical, and social variables in the analysis.

Table 6 describes the emotional, practical, and social variables used in the analysis in relation to average number of shares, and number of articles. As articles can be categorized with more than one variable, many will score high in several categories. Only the articles receiving a score of 4 or 5 for a specific variable are counted in the above table. A score of 4 or 5 means that the variable is present to a high degree in the article, and should be regarded as important to how the article is received by the reader. From the top ten list in table 5 we see that most of the top articles score high in two or three different variables. The variable s*ocial currency*, describing the social standing gained by sharing something, is present in 74 of 108 articles. Social currency is the most frequently occurring of the variables, yet it does not have the highest number of average shares. *Practical value*, clearly present in only 17 articles has the highest average share number with 5550 shares, well above the total average share number of 4211. *Anxiety* and *sadness* have the lowest number of occurrences with

presence in respectively 6 and 12 articles. These two negative emotions also have average share values lower than the total average across all articles. The high arousal emotions of *awe*, *joy*, and *anger* are present in almost the same number of articles each at 24, 24, and 22 respectively. They are the most prevalent emotions in the selection, and apart from *joy* they have average share numbers higher than the total average.

	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
Mean	1,70	3,94	1,84	1,36	1,52	1,93	2
Mode	1	5	1	1	1	1	1
Median	1	4	1	1	1	1	1
Range	4	4	4	4	4	4	4
Minimum	1	1	1	1	1	1	1
Maximum	5	5	5	5	5	5	5
Count	108	108	108	108	108	108	108

Table 7: Summary statistics

Table 7 above describes the mean, mode, and median of the variables used in the analysis. Looking at the table it immediately becomes obvious that social currency is the variable with the strongest presence in the selection. The mean (average) social currency score of 108 articles is 3,94 and the mode (most frequently occurring score) is 5. The low scores of the other variables demonstrates how varied the spectrum of emotions are in the selection as none have mean values above 2 or mode values above 1.

4.1.1 Practical Value

The variable *practical value* describes the extent to which an article contains practically useful information.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Practical Value:
86	Nå er det forbudt å løfte katten etter nakkeskinnet	VG	32343	5
91	Forskere mener E-sigaretter er svært kreftfarlige	VG	9342	5
95	Slik unngår du narasin-kylling	VG	6725	5
26	Høyt inntak av melk kan gi tidligere død	VG	5312	5
106	Tenner du ofte og mange stearinlys? Les dette	Aftenposten	4499	5
73	5 ting du aldri bør dele på Facebook	VG	2556	5
85	Dette er Norges beste julebyer	Nettavisen	2175	5
77	Supersøndag for skifrelste nordmenn	VG	1702	5
16	- Slutt å si til ungene at de er unike	Aftenposten	1443	5

Table 8: All articles scoring 5 in Practical Value. Articles marked in blue are also among the top ten most shared articles in the period.

Listed in table 8 are all the articles in the analysis that scored 5 in the variable *practical value*, ranged from the highest to the lowest amount of shares. The listed articles all have a clear presence of practically useful information. The five top articles, in table 8, had a share number that was higher than the total average, and two of the articles (marked in blue) also appear on the list of top ten shared articles in the analysis.

One interesting find to note on this subject is article number 87 (see table 7 below). It does not have a very high share number, but the interesting observation is the time when the article reached its peak in Facebook shares.

Unit number:	Collection date/day:	Article headline:	Newspaper:	Last updated:	Facebook shares:	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
87	26.11.2014 / Wednesday	Ny trend: Her er selfie-stangen	VG	09.07.2014	2454	3	3	1	1	1	3	1

Table 9: Article 87. Marked in blue is the collection date, and the date when the article was last updated.

Table 9 shows that article 87 did not score particularly high in any variable, and it was last updated on July 9th, 2014, yet it was among the top three most shared articles on November 26th, 2014. The article describes the somewhat new phenomenon of "selfie-sticks", sticks to mount a camera on to take self portrait photographs. The date it was most shared, over three months after it was first published, is a date when people have Christmas shopping in the front of their minds. It is likely that by providing useful information about a potential Christmas gift the article was made current and shareable once the need for gift ideas became apparent.

4.1.2 Social Currency

The variable *social currency* is used to measure wether a piece of information can give social value back to the person who is sharing it. Table 10 below is a list of the top articles scoring 5 in social currency ranged by number of shares. There was a total of 48 articles that received the top score in social currency, but due to limited space only the top ten are included in the below table.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Social Currency:
83	Når ble det forbudt å irettesette ulydige barn?	Aftenposten	38076	5
58	Gilbert utestengt fra Gaza på livstid	VG	13763	5
101	Flere tusen støtter Frodes Elkjøp-utbrudd	Nettavisen	13143	5
79	Alle andre får lov	VG	12224	5
105	Kom som asylsøker, ble milliardær	Aftenposten	8495	5
102	Vi skaper et samfunn av drittsekker	VG	8392	5
61	Krever at Israel-ambassadør må inn på teppet	VG	7212	5
67	Kronikk: En murersønns bekjennelse	VG	7048	5
95	Slik unngår du narasin-kylling	VG	6725	5
46	Så mye kontanter får flyktningene	Nettavisen	6243	5

Table 10: Top shared articles scoring 5 in Social Currency. Articles marked in blue are also among the top ten most shared articles in the period.

Six articles (marked in blue above) with the maximum score in social currency are found on the top ten list of total shares in the period. All articles in table 10 can be said to have high share numbers compared to the total average of 4211 shares. All the three newspapers in the final analysis are represented in the table with more than one article, yet VG can be said to be the winner in this instance with 6 articles. Aftenposten and Nettavisen are represented with 2 articles each.

An interesting observation of shared articles scoring high in social currency is that they also score high in at least one other variable. The below table shows the six articles with a social currency score of 5 that are also found in the total top ten. In addition to the social currency variable the table accounts for the other emotional and practical variables as well.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
83	Når ble det forbudt å irettesette ulydige barn?	Aftenposten	38076	3	**5**	3	1	1	1	**5**
58	Gilbert utestengt fra Gaza på livstid	VG	13763	1	**5**	**4**	1	3	1	1
101	Flere tusen støtter Frodes Elkjøp-utbrudd	Nettavisen	13143	1	**5**	**4**	1	1	3	**4**
79	Alle andre får lov	VG	12224	1	**5**	**4**	1	1	1	3
105	Kom som asylsøker, ble milliardær	Aftenposten	8495	1	**5**	1	1	1	**4**	**5**
102	Vi skaper et samfunn av drittsekker	VG	8392	1	**5**	1	1	1	1	**4**

Table 11: Social currency vs other variables.

Represented in table 11 are the six articles that were marked in blue in table 10. They have been coded 5 in social currency, and can also be found among the top ten most shared articles in the period. Additional information in table 11 are the added variables, showing that shared articles with a high social currency factor also score high in at least one other variable. Social currency is marked in blue, and marked with bold print is where an article has scored high (4 or 5) in other variables as well. Again we see that the emotion presumed to have a negative effect on sharing (sadness) does not have a significant presence. One article (unit 58) is coded 3 in sadness, meaning that the emotion of sadness is present to a medium degree, yet this article scores higher in both social currency and the, presumably much more shareable, emotion of anger.

Units 101 and 102 are examples of seasonal articles as they both deal with issues related to Christmas. These two articles are about the pressure people feel every

Christmas to buy expensive presents. As they were both published in the beginning of December their subject matter was very current at the time.

4.1.3 Anger

The variable *anger* describes the extent to which an article makes the reader feel angry. The below table contains all the articles in the analysis that scored 5 in the anger variable.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Anger:
60	Kronikk: Vi må tørre å brøle	VG	5072	5
64	«Jeg ønsker at fosterforeldrene sier god natt. Og at de ikke skal bli sinte når jeg tisser på meg»	Nettavisen	4796	5
53	Margit (17) tar et oppgjør med mobbingen	VG	3921	5
94	23 år gammel student døde i natt - for sitt heltemot	Nettavisen	1923	5
99	Mobbingen startet i 1.klasse	Nettavisen	832	5

Table 12: Top shared articles scoring 5 in Anger. None of the articles are found in the total top ten list.

As table 12 shows only five articles scored the top score of 5 in the anger variable. This means that they contained a clear presence of the emotion anger. None of these articles are found in the total top ten list for the time period. The Facebook shares these articles received range from 832 to 5074, with only the top two being shared more than the total average of 4211 shares. Only VG and Nettavisen are represented in the table, meaning no articles from Aftenposten were coded 5 in the anger variable. Articles 60, 53, and 99 were published shortly after the case of 11 year old Odin's suicide broke the news. The articles deal with the issue of bullying that was also at the core of Odin's case. Article 64 also deals with the subject of children's physical and mental health, but not in relation to bullying, and article 94 is about a murder case. All the articles, however, have in common the underlying subject of unfair treatment of individuals.

When looking at the anger variable in relation to other variables, as in table 11 below, we see that in the case of these five articles there is another emotion present in addition to anger.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
60	Kronikk: Vi må tørre å brøle	VG	5072	1	5	**5**	1	**4**	1	1
64	«Jeg ønsker at fosterforeldrene sier god natt. Og at de ikke skal bli sinte når jeg tisser på meg»	Nettavisen	4796	1	5	**5**	1	**5**	1	1
53	Margit (17) tar et oppgjør med mobbingen	VG	3921	1	5	**5**	3	**4**	1	1
94	23 år gammel student døde i natt - for sitt heltemot	Nettavisen	1923	1	4	**5**	1	**4**	1	4
99	Mobbingen startet i 1.klasse	Nettavisen	832	1	5	**5**	1	**4**	1	1

Table 13: Anger vs other variables.

Table 13 shows the above mentioned five articles with the anger variable marked in blue. All the articles scored high in social currency as well, with four out of five receiving the score 5 and the remaining article receiving a score of 4. In the sadness variable the articles all received 4 or 5, meaning that the emotion of sadness was present or clearly present in the article. The sadness variable is marked with bold print to point out a possible connection that I will get back to in the next chapter.

4.1.4 Anxiety

The variable *anxiety* is used to measure the extent to which an article causes the emotion of anxiety in the reader.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Anxiety:
100	Leger slår alarm om ny kyllingbakterie	VG	2872	5

Table 14: The only article in the analysis scoring 5 in Anxiety.

Table 14 contains the only article in the analysis that scored 5 in the anxiety variable. The article, from VG, is about antibiotic resistant bacteria found in raw chicken meat. An issue that is likely to frighten those who eat chicken meat. The article got 2872 Facebook shares, well below the average of 4211 for the entire time period.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
100	Leger slår alarm om ny kyllingbakterie	VG	2872	**4**	**4**	1	**5**	1	1	1

Table 15: Anxiety vs other variables.

Table 15 shows that the article scored 4 in both practical value and social currency, meaning that these variables were present in addition to anxiety. The article had no presence of anger, sadness, joy or awe.

4.1.5 Sadness

The *sadness* variable describes the extent to which an article makes the reader feel sad.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Sadness:
64	«Jeg ønsker at fosterforeldrene sier god natt. Og at de ikke skal bli sinte når jeg tisser på meg»	Nettavisen	4796	5
49	Odins mamma om responsen: - Det betyr alt for meg	VG	3164	5
30	– Joshua holdes i live av moren	Nettavisen	2824	5

Table 16: Top shared articles scoring 5 in sadness.

Table 16 shows the only three articles in the analysis that were coded 5 in the sadness variable. The articles' share numbers range from 2824 to 4796, and again no articles from Aftenposten are included. None of the articles appear in the total top ten list for the time period. Article 64 has a share number slightly above the average of 4211 shares. It's worth noting that this article also scored 5 in the anger variable. Articles 64 and 49 are about children's mental health, while article 30 is about Norwegian citizen Joshua French's prison conditions in the Congo.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
64	«Jeg ønsker at fosterforeldrene sier god natt. Og at de ikke skal bli sinte når jeg tisser på meg»	Nettavisen	4796	1	**5**	**5**	1	**5**	1	1
49	Odins mamma om responsen: - Det betyr alt for meg	VG	3164	1	**5**	**4**	1	**5**	1	1
30	– Joshua holdes i live av moren	Nettavisen	2824	1	3	2	1	**5**	1	1

Table 17: Sadness vs other variables

Table 17 shows the list of articles that were coded 5 in sadness with other variables added. Article 64, which received 4796 shares, an above average number, also scores high in social currency and anger. Article 49 with 3164 shares has almost equally high scores in these two variables with 5 and 4 respectively. Article 30 had 2824 shares, but scored 5 in only the sadness variable. It scored 3 and 2 in social currency and anger respectively which means that it has medium value as social currency, and anger is present to a low degree. No articles with a top score in sadness were found to have any presence of the positive emotions joy and awe.

4.1.6 Joy

The *joy* variable describes how clear the presence of joy is in the article.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Joy:
25	Du vil ikke tro hva NAV skrev i sms-en	Nettavisen	8518	5
20	Misjonssamban det vil tenne «lystene»	VG	4394	5
13	Kronikk: Nordmenns mange rariteter	VG	4286	5
104	Kjøpmann Mehmet gir bort hele juleoverskuddet	Nettavisen	2296	5

Table 18: Top shared articles scoring 5 in joy. Ranged by descending number of shares.

Table 18 shows all the articles in the analysis that scored 5 in the joy variable. Their share numbers range from 2296 at the lowest to 8518 at the highest. Only VG and Nettavisen had articles receiving this score. Only one article, number 25, can also be found on the top ten list of total shares in the time period with 8518 shares. Articles 25, 20 and 30 all have share numbers above the average of 4211 shares, and they have in common a humorous approach to the subject matter of the article. Article 104 has a below average share number of 2296 with the same high score in the joy variable, although this article does not have the same use of humour.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
25	Du vil ikke tro hva NAV skrev i sms-en	Nettavisen	8518	1	**4**	1	1	1	**5**	1
20	Misjonssamban det vil tenne «lystene»	VG	4394	1	**4**	1	1	1	**5**	1
13	Kronikk: Nordmenns mange rariteter	VG	4286	1	**5**	1	1	1	**5**	1
104	Kjøpmann Mehmet gir bort hele juleoverskuddet	Nettavisen	2296	1	**4**	1	1	1	**5**	**4**

Table 19: Joy vs other variables.

In table 19 above the blue column marks the joy variable. The articles have in common that they all get a high score in the social currency variable as well. Article 104 also scores high in a third variable, the emotion awe. All the above articles have been coded 1 for negative emotions, meaning that the reader/coder got no negative emotions from reading the article.

4.1.7 Awe

The *awe* variable describes the amount of awe felt by the reader/coder of an article.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Awe:
83	Når ble det forbudt å irettesette ulydige barn?	Aftenposten	38076	5
105	Kom som asylsøker, ble milliardær	Aftenposten	8495	5
63	Er det sant at franske barn ikke får ADHD?	Aftenposten	3118	5
57	Sjekk Påls prisbelønte bilde!	VG	2398	5
47	Norske Christensen ble verdensmester på rekordvis	VG	1932	5
48	Materialet som kan danke ut oljen	Aftenposten	1557	5
45	Leiligheten er bare 8 kvadratmeter!	Aftenposten	817	5

Table 20: All article scoring 5 in the awe variable.

Table 20 shows all articles in the analysis that were coded 5 in the awe variable, ranged by descending number of shares. Share numbers for these articles range from 817 to 38076, the latter of which is also the highest number of shares in the analysis. The two articles marked in blue, 83 and 105, are also among the top ten most shared articles in the analysis. Aftenposten is represented with 5 articles in the above table, VG with 2, and Nettavisen with 0 articles scoring 5 in the awe variable. There are no clear thematic similarities between the articles.

Unit number:	Article headline:	Newspaper:	Facebook shares:	Practical Value:	Social Currency:	Anger:	Anxiety:	Sadness:	Joy:	Awe:
83	Når ble det forbudt å irettesette ulydige barn?	Aftenposten	38076	3	**5**	3	1	1	1	**5**
105	Kom som asylsøker, ble milliardær	Aftenposten	8495	1	**5**	1	1	1	**4**	**5**
63	Er det sant at franske barn ikke får ADHD?	Aftenposten	3118	1	3	1	1	1	1	**5**
57	Sjekk Påls prisbelønte bilde!	VG	2398	1	**5**	1	1	1	1	**5**
47	Norske Christensen ble verdensmester på rekordvis	VG	1932	1	3	1	1	1	**4**	**5**
48	Materialet som kan danke ut oljen	Aftenposten	1557	2	**5**	1	1	1	1	**5**
45	Leiligheten er bare 8 kvadratmeter!	Aftenposten	817	1	3	1	1	1	1	**5**

Table 21: Awe vs other variables.

Table 21 lists the articles scoring 5 in the awe variable together with other variables. Four of the articles, numbers 83, 105, 57 and 48, also score high in social currency. Articles 105 and 47 also have a clear presence of joy. Only article 83 has been coded for a negative emotion, having a partial presence of anger. The low arousal emotion of sadness are not present in any of the articles.

4.1.8 News theme

When looking at the different themes of the news articles included in the analysis there are two, in particular, that stand out.

News genre:	Politics:	Celebrities:	Science:	Sports:	"How to":	Arts (kultur):	International news:	Health:	Economics:	Other news:
Articles:	33	12	10	10	5	13	4	42	18	14

Table 22: Overview of themes of all articles in the analysis. Articles can belong to more than one category.

Politics and *health* themes (marked in blue in table 22) have a much bigger presence in the analysis than any other, with the health theme being the winner. Isolating articles from these two themes show that they have a much higher average score in the social currency variable than the total average. The average score in social currency for all

articles in the analysis in 3,9 while in the themes *politics* and *health* the average is 4,2 and 4,7 respectively.

If we look at only the articles with an above average share number (above 4211) the results are the same with politics and health articles being the most shared, followed by economics.

News genre:	Politics:	Celebrities:	Science:	Sports:	"How to":	Arts (kultur):	International news:	Health:	Economics:	Other news:
Articles:	9	3	2	2	2	3	2	14	7	7

Table 23: Overview of themes in articles with an above average share number. Articles can belong to more than one category.

Table 23 describes the 37 out of 108 articles that have share numbers above the average for the time period. The average for the period was 4211, while the articles in table 23 have share numbers ranging from 4225 to 38076.

5 Discussion

Based on the results presented in the previous chapter, the following chapter will be dedicated to discussing and interpreting said results in light of theories presented and methodological choices made. Additionally the results will be held up against previous research reviewed in chapter 2. The chapter is divided into 4 parts that will deal with the emotional, practical, and social currency variables separately.

The descriptive statistics of table 4 in the previous chapter briefly sum up the main building blocks of this study. 108 online newspaper articles form the basis of the analysis and discussion that follows. The articles were collected in sets of 2 or 3 of the most shared articles on each day of the research period, creating a set that ranges in shares from 338 to 38076 with the average number of shares being 4211. Initially there were 4 different newspapers included in the study, Nettavisen, Aftenposten, VG, and Dagbladet. However Dagbladet's articles did not reach the top 3 shared articles on any day during the research period and was therefore omitted from the study's results. Left to be analysed then were 28 articles from Nettavisen, 37 from Aftenposten, and 43 from VG.

The top ten list in table 5 shows how all of the most shared articles have a strong presence of one or more variables. In fact only two among the top ten have scored high in only one variable. Unit number 40 has scored 4 (out of 5) in the emotion of awe, but gotten low scores of 1 or 2 in all other variables. Unit number 91 has scored 5 in practical value, 3 in social currency, but low in all other variables. The remaining 8 of the top ten all have a clear presence of more than one of the variables that presumably influence sharing. The supposedly viral emotion of anxiety has very little presence in the selection, even less so than sadness.

Sadness, presumed to have a negative effect on sharing, has no presence in all but one of the top ten articles. Only unit number 58 (among the top ten) has been coded for the presence of sadness with a score of 3 (moderate), meaning that sadness is present in the article to a moderate extent. This article also has a clear presence of two other variables, social currency and anger, presumed to have a positive effect on sharing.

5.1 How does emotional selection affect sharing in social media?

Heath et al. (2001) and Delius (1989) describes how memes are highly dependent on an emotional reaction to diffuse in a population, and Espinosa and Bernales (2014) and Fan et al. (2013) show how emotions are contagious in online social networks. My research attempts to replicate that of Berger and Milkman (2012) to specify which of their traits for virality can also be found in shared Norwegian news articles.

As can be seen in table 6 of the previous chapter the high arousal emotions of anger, joy, and awe are present in the selection to a much greater extent than the low arousal emotion sadness. Out of 108 articles 22 scored high (4 or 5) in anger, 24 scored high in joy, and 24 in awe. Only 6 articles, in the total collection, received a high score in anxiety, and 12 articles scored high in sadness, indicating that anxiety may not belong in the company of viral emotions. Looking at the top ten list in table 5 we see that none of these articles had a significant presence of either sadness or anxiety. An observation to note is that from the 108 selected articles there is a slight tendency towards positive emotions being shared more than negative. This is consistent with Berger's and Milkman's findings of 2012. In my material there are 18 articles that had a high presence of anger (score 4 or 5), and 21 articles with a high presence of joy (score 4 or 5). Berger and Milkman used automated sentiment analysis (counting positive vs negative words) on their research selection to determine the virality of positive over negative content. This research method has been outside my scope, however my results still show joy to be more prevalent in shared articles than anger even though both are considered contagious emotions. These results replicate those of Berger and Milkman. I have chosen to not include awe among positive emotions, but in a category of its own. The emotion of awe is not exclusively a positive emotion, but is frequently occurring alongside both anger and joy in my selected articles.

The following subchapters will deal with the selected variables one by one to shed light on their prevalence in Norwegian newspaper articles being shared on Facebook. The variables have previously been defined by Berger and Milkman (2012) to have an impact on sharing, and the following discussion will present this paper's findings in light of Berger and Milkman's theories as well as other previous research on the field.

5.1.1 Joy

Joy is positively linked with sharing on Facebook. Out of the 108 articles included in this analysis 33 were rated 3, 4 or 5 in the joy variable, meaning that the emotion of joy was present from a mid level to a high degree in 33 articles (each article was among the three most shared articles on one day of the research period). As shown in table 18 there are 4 articles in the selection that scored 5 in joy, with four of these articles having share numbers above the average (4211) for the entire selection. These four articles have in common that they contain humorous content. The articles' contents are on the funny side of joy more than the feel-good side, suggesting that the humorous part of joy might be more viral than its other variations. Furthermore three articles in the top ten list had a medium to a high level presence of joy. These results are in tune with previous research both in terms of the contagious nature of the emotion joy, but also in terms of emotions being shared through online social networks.

Chapter 2.6 showcases the examples of the NDL's mistakes on twitter and the feel-good videos *First Kiss* and *Would you give your jacket to Johannes?*. The latter two are clearly positive in their emotional content and have reached great viral success. They awaken joy in the viewer and are designed to make people smile at the kindness and affection people are capable of. The case of NDL on twitter consists of mixed emotions, but joy and its relative schadenfreude is likely the cause of its popularity.

These results match with previous research as well as that of Berger and Milkman (2012) and can be used to explain the virality of the above mentioned examples. Joy is positively linked to sharing in social media and is likely more viral than its opposite, anger. In my selection 21 articles were coded 4 or 5 in joy whereas 18 were coded 4 or 5 in anger. These number are only slightly different, and presumably a bigger selection of articles would offer greater differences, however they are consistent with the findings of Berger and Milkman who state that positive emotions are much more viral than negative ones.

Joy is an emotion that creates arousal in the reader, while also being positively linked to sharing. My study confirms that the emotion of joy is present to a high degree in shared content, and is likely an effective motivator for sharing. As stated by Barrett and Russel (1998) joy is a high arousal emotion which promotes action rather than inaction. An action is required to share a piece of information, making high

arousal emotions vital for sharing. In the case of joy we see a clear link between articles scoring high in joy and high share numbers.

5.1.2 Anger

Anger is also positively linked to sharing via Facebook. Out of the 108 articles in the analysis 29 articles had a medium to a high level presence of anger (coded 3, 4 or 5). Table 12 shows the five articles that were coded 5 in the anger variable. Considering the established virality of anger one would assume that the five articles in table 12 are also found in the top ten list of shared articles, however that is not the case. In table 13 it becomes apparent that these five articles, seemingly full of a contagious emotion, also convey high levels of sadness which is a low arousal emotion. This is an interesting observation because it demonstrates how the low arousal state of sadness may work against the high arousal state of anger when it comes to sharing. In the top ten list of table 5 we see three articles scoring 4 in anger, lower than the articles mentioned above, yet with higher share numbers. What separates this set (coded 4) from the above set (coded 5) is the absence of sadness, allowing them to reach higher share numbers.

These results match with the research of Bayerl and Stoynov (2014), Moreno (2014), and the results of Berger and Milkman (2012) both in terms of angers presence in shared content, but also in the negative effect sadness may have on sharing. My results, as well as those of Berger and Milkman, slightly contradict Fan et al. (2013) who found that anger spreads faster than joy. Their study shed light on the propagation of anger, fear, joy and disgust on the Chinese social site Weibo. They found that anger had the biggest potential for virality with joy coming in second. Heath et al. (2001) studying urban legends argue that anger and disgust provides the best breeding ground for the propagation of scary memes. The main difference between these studies is the medium were data has been collected. Berger and Milkman and myself collected data from shared newspaper articles while Fan et al. collected messages posted on Weibo, the Chinese equivalent of Twitter and Heath et al. analysed American urban legends. This suggests that even though both anger and joy were found to be viral emotions in all the above mentioned studies there may be cultural or content specific differences in the virality of the different high arousal emotions.

Anger is an arousing emotion that promotes action over inaction. Previous research have asserted that it is a contagious emotion although there is some discrepancy over wether joy or anger has the biggest viral potential. My own results support the claim that anger promotes sharing as well as showing that anger may have a little less viral potential than joy.

5.1.3 Awe

In addition to anger and joy my results indicate that awe is also positively linked to sharing on Facebook. Not only that, but awe is the most frequent occurring emotion in my selection with a medium to high level presence (coded 3, 4 or 5) in 36 out of 108 articles, suggesting that awe might be more viral than joy and anger. Awe frequently occurs paired with both anger and joy. It does, however, occur more frequently paired with joy than it does with anger. Awe occurs on a medium to high degree in six of the top ten articles in the selection (table 5), although only in two articles is awe the only emotion present. In the four other articles awe occurs alongside either joy or anger. The article with the highest share number (38076) in the entire selection has a high level presence of the emotion awe (coded 5), and a mid level presence of anger (coded 3) further suggesting that awe might be the most viral of the emotions included in this analysis.

There is little other research into the viral potential of awe specifically. Other research has looked into positive vs negative emotions only, or joy vs anger only, but both my own research and Berger and Milkman (2012) confirm awe's positive effect on online sharing. There is still some discrepancies between anger, joy or awe being the most viral emotion, and it will likely depend on the content and medium chosen for analysis, but the positive link between these emotions and sharing is well established and further backed up in my own results.

5.1.4 Anxiety

When it comes to anxiety my results differ from those of Berger and Milkman. Only 15 of the 108 articles in the selection had a medium to a high presence of anxiety (coded 3, 4 or 5). Anxiety is characterized by the expectation of future threat, and is

classified as a high arousal emotion. According to Berger and Milkman's research this will makes anxiety a motivating factor for sharing in social media, but in my selection anxiety appears in only 13 % of the articles and always paired with high values of at least one other variable.

The fact that anxiety shows up only in pairing with other variables means that my results are inconclusive when it comes to this particular emotion. The discrepancies between my results and those of Berger and Milkman could be due to cultural differences among journalist in the USA and Norway. It's possible that Berger and Milkman's source material (articles from the New York Times) contains more anxiety than my own source material (articles from 3 Norwegian newspapers) due to preferences among journalists and readers in our two respective countries.

While I have not found conclusive links between sharing and the emotion of anxiety it is still apparent that anxiety does have a presence in shared articles. However, so does sadness which is a low arousal emotion that, according to Berger and Milkman, has a negative impact on sharing. Based on these results I can not conclude wether or not anxiety has viral potential. It is present in some of the analysed articles, but only paired with other variables which means that I can not draw the same conclusion that Berger and Milkman have about anxiety's viral potential.

5.1.5 Sadness

Sadness was used as a control variable because it is classified as a low arousal emotion that should negate sharing. This emotion was present to a medium to high degree (coded 3, 4 or 5) in 19 of the 108 articles in the analysis. This means that this low arousal emotion had a bigger presence in my selection than anxiety. This is an interesting result as anxiety is a high arousal emotion, and Berger and Milkman have reported that anxiety is much more viral than sadness. The number of articles containing sadness is low, ans as with anxiety sadness occurs in the selection only in tandem with other variables. Sadness is a low arousal emotion that should have a negative impact on sharing. Because all the articles in my selection have been shared the presence of sadness likely means that other variables outcompete sadness allowing the articles to be shared even when they contain this particular emotion.

It is difficult to draw a definite conclusion on sadness' impact on sharing without having samples of articles with no shares to use as a control test. However considering the reported results it is highly plausible that Berger and Milkman's conclusions are correct. The presence of sadness in my selection is low compared to other variables and always occurs paired with other variables. It is reasonable to believe, based on the above results, that sadness has a negative impact on sharing.

5.1.6 Social Currency

Social currency describes the value of social standing gained from sharing a piece of information, and is clearly a very important motivator for sharing. How shared information reflects back on the sharer is vital to the sharing process and my results confirm this link. 91 of the 108 articles in my analysis has a social currency value of medium to high (coded 3, 4 or 5). That means that almost all of the articles, when shared, provide some sort of social value for the person sharing it. Social currency is more often than not observed in pairing with other variables. Out of the top ten shared articles (see table 4) only one article has a social currency rating below medium (coded 2), and one article has a medium rating (coded 3). The high saturation of the social currency variable leads me to ask which variable is most vital to sharing, emotion and practical utility, or social currency? Or are they dependent on each other to receive a high number of shares? Both types of variable are positively linked to sharing, according to Berger and Milkman, so it is reasonable to assume that they should be able to stand on their own. However if we consider the content of the articles we see that their usefulness as social currency is, in many cases, hinged upon their emotional or practical content. Consider the monetary currency we use every day, we attribute a value to it that is higher than the paper it is printed on. So it may be with social currency, it depends on the content, and the content sets the value.

This is not valid in every case however. Consider unit number 10, titled *Krisemåling for FrP*, an article about low ratings for political party Fremskrittspartiet. It contains no amount of practical utility or emotion, but does convey, when shared, that the sharer keeps up to date on political issues, something that is valuable as a social currency. Research has confirmed that we are more likely to share positive information about ourselves online rather than negative (Qiu et al., 2012), hence we

want the information we share to put us in a good light. It is difficult to trace wether an emotion, practical usefulness or social currency is the trigger for sharing a given piece of content or information. However when considering the overwhelming presence of the social currency variable in my selection there seems to be little doubt that it is a vital motivation for sharing. Often it will be in conjunction with other variables, but it may also stand on its own, positively linked to sharing.

5.1.7 Practical value

Practically useful information is positively linked to sharing. Chapter 2.7 describes how viral practically useful content can be. Content has practical value if it contains information that the receiver can put to use to create or achieve something. 22 of the 108 articles in my selection have a medium to a high presence of practical usefulness (coded 3, 4 or 5). The number appears low, but when looking at the share numbers of the articles that contain practically useful information we see that they receive high share numbers even without the support of multiple variables. Consider unit number 91 titled *Forskere mener E-sigaretter er svært kreftfarlige*, about the potential health hazards of smoking e-cigarettes. This article scores 5 in practical value, 3 in social currency, and has no registered values of other variables. The article's worth as social currency stems from the fact that it carries important information about health factors. This article received 9342 shares on Facebook and is number 6 on the list of top ten shared articles. In total there are three articles among the top ten that have a medium to a high presence of practically useful information (coded 3, 4 or 5).

My results match those of Berger and Milkman in this regard as well, confirming that information with practical utility is highly shareable and has great viral potential.

5.2 Discussion summary

Analysis of 108 of the most shared Norwegian online news articles, over a period of 2 months, help to paint a picture of the factors that contribute to viral sharing in social media. Building on, and replicating, research by Jonah Berger and Katherine Milkman the presented results contribute to our understanding of the propagation of content in

social media. While previous research have discussed the role of high vs low levels of emotionality, or positive vs negative emotions, there have been few scientific explorations of specific emotions and their effect on sharing. My research fit into a line of studies that range from marketing to psychology, from word-of-mouth, via generic information sharing and memes, to contagious emotions in social media. The results of this analysis add to the current established view that emotional selection plays a vital role in spreading information. Said information can be anything from urban legends to news articles, yet the emotions that affect sharing appear to be the same set of high arousal emotions regardless of the type of information or even the medium used to communicate.

The above presentation and discussion of my findings show that some high arousal emotions are positively linked to sharing, and some low arousal emotions are negatively linked to sharing. These results are not necessarily applicable to all emotions belonging to the two categories of low and high arousal, only to the ones measured in the analysis.

There are however a few discrepancies between my own results and those of Berger and Milkman (2012) when it comes to emotional content. First of all our results differ in which emotion is the most viral. Berger and Milkman found joy to be the most contagious emotion, but in my selection awe proved to be the most viral emotion. It is the most frequently occurring emotion in my selection suggesting that awe is indeed the most viral.

Another and more pronounced difference between our two analyses are the results from the anxiety variable. Anxiety is regarded as a high arousal emotion and should be positively linked to sharing in social media. Berger and Milkman (2012) found this emotion to be viral, however my own results indicate the opposite. Based on my own analysis anxiety is either the least viral emotion or it is the least frequently occurring emotion in my selection, in both cases my results are admittedly inconclusive on this point.

The differences between my own and Berger and Milkman's results may have several different explanations. Firstly I have used a much smaller selection of units in my own analysis compared to Berger and Milkman, which means that anxiety might be viral, but because my selection is small it doesn't appear as often as other emotions and is therefore assumed to be non-viral. Secondly conflicting results could be caused by supposed cultural differences in the journalistic approach to writing articles, or

perhaps due to cultural differences among Norwegian and American news readers leading to more news angled towards anxiety in the USA than in Norway. Based on the fact that Berger and Milkman found anxiety to be viral, and I did not, I can not conclude either way in regards to this specific variable.

In addition to the above my analysis also indicates that practically useful information and social currency are very important factors in the viral process. Similar to Berger and Milkman I found that shared articles have a high occurrence rate of practical utility and an especially high rate of social currency. Chapter 2.7 demonstrated how popular content containing practical information can become. From "how-to" videos on youtube to entire social networks based around the sharing of food recipes. Web stores providing user written reviews of their products are highly popular, and the growing business of content marketing is the art of providing, or hiding, useful information within a marketing activity.

Social currency describes a measurement to how a piece of shared information reflects back on the person doing the sharing. Chapter 2.8 outlines why social currency is such an important factor in information sharing activities. It is the perceived social value gained by sharing, and it might be the most important motivating factor behind virality. Social currency is the most frequently occurring variable in my analysis indicating that even though we personally, and as a society, may reap the benefits of information sharing it is more often than not done for selfish reasons.

Also included in my analysis were some of the most common news themes that articles can belong to. Theme as a variable is beside the main objectives of this thesis, consequently I will not draw any conclusions as to the virality of different themes. It is however interesting to note that two themes appear much more frequently than others in my selection. Politics and health related themes appear respectively 33 and 42 times in my selected material. In comparison the third most frequent theme is economics with 18 occurrences. The articles were coded for more than one theme at a time if applicable. These two themes appear to be the most viral in a Norwegian online news setting, and they show a link to the social currency variable. The analysis shows above average occurrences of social currency in articles containing politics and health related themes. Likely it is not the theme itself that brings a viral quality, but rather the fact that political and health related articles are valuable as social currency. Sharing an article about politics can be interpreted as a way of appearing up to date on current

issues. And sharing health related content creates an assumption that the person sharing cares about their health and healthy living.

5.3 Limitations

This thesis has some limitation that should be shed light upon to understand how its results can be useful, and to suggest improvements for future research. First of all this analysis consists of Norwegian online news articles. This means that the results are not automatically valid outside this context. Although news articles in my selection seem to go viral based on the variables mapped out by Berger and Milkman (2012) the results may not be generalisable across all types of content (videos, images, etc.), only news articles. As Berger and Milkman conducted their research using news articles in the USA, I have used Norwegian articles and ended up with very similar results, showing possible generalisability across different cultures. However there are a few discrepancies between the two, outlined in chapter 5.2, that may be due to different cultural preferences.

Another possible explanation for the above variations is the relatively small selection in my own analysis compared to that of Berger and Milkman. It's possible that with a bigger selection the anxiety variable, found to be viral by Berger and Milkman, but not by me, would be more prevalent in a Norwegian news context too.

There is also an issue within the definition of the emotional variables. Berger and Milkman referred coders to the wikipedia articles about each emotion, hence I have used the same definition in my own analysis. Yet, when accounting for different cultural contexts, there may be slight differences in how some emotions are perceived and emotional subtleties can be lost in translation.

Finally there is also a possibility that some articles are shared mostly based on their headline and not their content. Headlines can be sensationalized and not represent the article's content accurately. If an article is shared based on its headline and that headline doesn't match the content, the article can reach an unjustified number of shares. Unit 11 in my selection is a possible example of this. The articles headline reads *Nå er røyking helt ut - men også litt inn* (Smoking is out – but also a bit cool). This headline creates an assumption that the article will be health related, which as shown provides social currency, and it tempts both smokers and non-smokers with highly shareable information. However the article has no presence of any of the

variables except a minimal presence of joy (coded 2), the lowest total score in the analysis. Yet it had 2160 shares on the day of collection.

5.4 Alternative research designs and suggestions for future research

As outlined above the analysis has a few limitations to its generalisability across other types of content and other cultural contexts. Alternative or complementing research methods could increase the robustness of the above results as well as contribute to the ongoing viral discourse. A possible research design to complement the results of this thesis would be to have a selection of articles without any shares. A collection of articles that has not been shared or shared to a minimal degree would allow testing for many of the above limitations. A selection of this kind could be tested for the presence of sadness, presumed to have a negative impact on sharing, as well as further testing for anxiety. The anxiety variable provided only inconclusive results in my own analysis. If the variables found to be viral by Berger and Milkman, and myself, were as prevalent in such a selection it would mean that there must be other variables that have not yet been accounted for in the viral process.

Further it would be beneficial to conduct qualitative interviews with users of social media to identify their personal motivations for sharing content. This approach would allow testing of the results presented in this thesis, as well as examining if content type (video, image, text, etc.) impacts the presence of variables, and so further contribute to the viral discourse.

6 Thesis summary and main findings

The goal of his thesis has been to identify a number of variables involved in the information sharing process, specifically to examine why some content goes viral online. This has been done by replicating parts of Berger and Milkman's research (2012), focusing on online news articles from Norwegian media. The research question has been: *How does emotional selection, social currency, and practical utility affect sharing in social media?* This question has been addressed by searching for Berger and Milkman's established criteria for virality (practical value, social currency, anger, anxiety, joy, awe) in news articles that have been shared on Facebook. In this way I have been able to verify most of the results of Berger and Milkman, and put their research into a different cultural context to check its replicability and generalisability.

This was done by utilizing the web service BuzzSumo.com to collect the three most shared articles from Nettavisen, Aftenposten and Dagbladet every day for almost two months acquiring a total of 108 articles. I then quantitatively analysed the articles looking for the presence of the previously defined traits, and coded the different variables in a Likert scale.

6.1 Main findings

- The high arousal emotions *anger*, *joy* and *awe* are present to a high degree in shared articles. My results strongly indicate that these emotions motivate sharing.

- The low arousal emotion *sadness* is present in shared articles but only in combination with other variables. My results indicate that sadness has a negative impact on sharing behaviour.

- *Practical value* is present to a high degree in shared articles. My results strongly indicate that an articles practical usefulness has a positive impact on sharing.

- *Social currency* is present to a very high degree in shared articles. My results strongly indicate that this is the top motivator for sharing news articles.

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