Human papilloma virus vaccination and the online news commenting:

A critical discourse analysis approach

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1 INTRODUCTION

1.1 Research topic and goals

In this master’s thesis I will concentrate on looking at comments of an online article that concerns human papilloma virus (HPV) vaccination. I will analyse the comments the readers have left to the article. The public discussion people have in the comment spaces of online articles offers an insight to what conceptions people have of certain issues. The article has been published in the online version of New York Times with the headline “HPV Vaccine Is Credited in Fall of Teenagers’ Infection Rate”, on June 19th 2013. The theoretical foundation of this thesis is largely based on the work of Norman Fairclough and his view of critical discourse analysis (CDA), and the comments are analysed using CDA as a foundation. According to the Centers of Disease Control and Prevention (CDC) HPV is one of the most common sexually transmitted infections in men and women. Infection is often harmless and can clear on its own but in some cases it can lead to genital warts, cervical cancer and oropharyngeal cancers. The refusal of HPV vaccination can lead to virus contagion and there is a risk of spreading it to others. Refusal from vaccination can also hinder the elimination of the dangerous types of HP virus. (Centers for Disease Control and Prevention [CDC], 2015. Genital HPV Infection - Fact Sheet) The ways in which vaccines are described and discussed in public have an impact on private decision-making. Understanding the discourses that people use when discussing vaccines is therefore important in order to wider understand vaccine conversation.

Vaccines are a controversial topic, which made me interested in seeing what kinds of discourses this piece of news might create. I wanted to see what kinds of arguments and justifications the commenters have for either accepting or not accepting the HPV vaccine. Anti-vaccination activists have been loudly reacting to news and studies done on vaccines and their safety, and this has had an effect on people who are looking for information about vaccines on the Internet (Kata, 2012, p. 3778). For example in the study of Feinberg et al. (2015) it was found that parents are especially interested in finding information about HPV vaccines, because they are given to children and adolescent. Discussion about HPV is heated, because it is transmitted in sexual contact. Some parents feel the vaccine is unnecessary because their child will not be having sex before marriage or they are not old enough to understand why the vaccine is important. Some feel that the vaccine is
not effective enough. To others, vaccination is simply preventative protection against diseases. In this thesis I wanted to look at comments that are written by people from different backgrounds. This point of view in mind, I chose to look at an online article from the NYTimes.com, which is widely read. The nationality of the commenters is not known. However, the article is written in English and the publication is from the New York Times which is published in the United States, so it can be assumed that the nationality of most of the commenters is American. The newspaper was chosen from an English-speaking country because this is a master's thesis in English philology.

In this thesis, online commenting in general is discussed. Online commenting is chosen because it is the most used and popular of the forms of user-generated content (Reich, 2011, p. 8). User-generated content means that the audiences of mass media have the chance to participate in producing and publishing their own content. The possibilities mass media provide are incorporated user-generated content applications on their websites, such as possibility for a user to create a blog, submit videos and pictures and rate, post or comment on news articles (Milioni&al., 2012, pp. 21-23).

Research on online commenting is relatively new and this is one of the reasons why I chose this topic. Online commenting can be done anonymously and this enables commenting against the majority of people. In the case of the present paper, the majority is the people who approve vaccination. Anonymity enables both writing provocatively and objectionably. I find this topic especially interesting because I personally consider vaccines to be a helpful and necessary way of eliminating or reducing diseases. This might have an effect on the way I analyse the comments but I have tried to maintain my research as objective and neutral as possible. Because critical discourse analysis is the method of analysis, it must also be noted that the results are subjective as CDA can offer different viewpoints for different researchers.

The research question I aim to answer is: What discourses the comments of HPV vaccination related piece of news create. In my analysis I will also see if commenting to news articles can be seen as a means of community building, however, the analysis foregrounds the discourses.
1.2 Doing Internet research

According to Jones (1999, p. xii) the Internet is a medium that has consequences in social and economic life. At the moment it can be said that everyone is connected with the Internet. The experiences people have online are somehow connected to the experiences people have offline. The Internet is connected to our social life. (Jones 1999, p. xii)

Costigan (1999, pp. xvii-xv) outlines the main ways of doing Internet research. First, the researcher has the ability to search and retrieve large amounts of data on a certain topic fast. The second research area is the interactive communication tools the Internet offers; E-mail, forums, Facebook and so on. These communities are built with the help of the Internet, and could not have been formed otherwise. (Constigan, 1998, pp.xvii-xv) My research uses the interactive communication tools, as the comment section of a news article can be seen as a communicative tool. According to Jones (1999, p. 13) for a researcher with an interest in discourse analysis, the Internet is an excellent and easily accessible research setting.

Eysenbach and Till (2001, p. 1103) have represented three different types of internet-based research methods. The first one is passive analysis, such as studies of information patterns on website or interactions on discussion groups without the researchers involving themselves. The second type is through active analysis, where researcher takes part in communication. In the third type researcher gathers information in the form of online interviews. My research is a passive analysis, as I do not take part in the communication process. Eysenbech and Till further state that Internet communities such as discussion boards on websites, mailing lists, chat rooms or newsgroups provide a great source of information. Internet postings are accessible for qualitative research of the voices of lay people; it is for example possible to see what people think of certain health related issues. (Eysenbach&Till, 2001, p. 1103)

Participants of internet communities may not appreciate researchers gathering information of their community. Because privacy, informed consent and confidentiality are basic ethical factors in research, the researcher must decide whether the used internet material is public or private. Possible
required registration and the number of community users define the publicity of the community. Also the codes, target audience, aims and norms of the community help to see whether the community can be considered private. (Eysenbach&Till, 2001, p. 1103) I consider my research material to be public. The comments are written on a public space and the writers acknowledge that anyone reading the article is also able to see the comment. The commenters want to publicly express their view on the matter, either to make a statement, offer excess information, make a disagreeing argument, have an effect on the opinions of others, and so on. The NYTimes.com is a popular news site and it can be assumed that the commenters are aware of this. Registration is required to make a comment but the commenter does not have to reveal any personal information.

1.3 Organization of the master’s thesis

This thesis is organised in seven main sections. In the introduction, I shortly explain the aim of the paper and the importance of the study. In addition, I discuss the ethicality of Internet research and how Internet research is usually conducted. In the second section, I will consider the commenting of online news and if anonymity of the writers has an effect on what and how people comment. In the third section I summarize earlier research and discussion concerning vaccination. It seems that every time vaccines come up in news or studies there is a group of commenters, presenting both pro- and counter-arguments. Regardless of the news, the argumentation technics in the comments have resemblance. In the fourth section I will present my method of analysis, which is critical discourse analysis. The data of this paper, the online article from the New York Times, is presented in the fifth section. The sixth section is my analysis of the comments. I will introduce the main discourses I found from the comments. Considerations of comments as a means community building are also included in the sixth section. In the seventh section I will conclude my master’s thesis and present ideas for further research. It must be noted that not all the comments left to the NYTimes.com article are present in this paper because of technical issues; there are over 130 comments and it would have lengthened the paper by half. However, the comments I have analysed are seen in the sixth section. Other comments are at present seen at: http://www.nytimes.com/2013/06/20/health/study-finds-sharp-drop-in-hpv-infections-in-girls.html?pagewanted=all&_r=1.
2 ONLINE NEWSPAPER COMMENTING

This section discusses the importance and meaning of commenting online news items. It explains why online publications allow people to comment on their news items. The motivation for people to comment is also discussed. The ethical issues concerning commenting are mentioned shortly. The amount of information the commenter wants to forward to other readers and news organizations has an effect on how people comment. Also anonymity and pseudonymity are discussed. In section 2.2 I will shortly go through studies concerning online news commenting concerning health issues.

2.1 Commenting in online news articles

Henrich and Holms (2011, p. 2) state that the option to comment on news stories and respond to the comments of other readers is offered by many newspapers. These conversations among the readers serve as a window of public opinion. Comments are immediate, spontaneous and honest. The thoughts, feelings and the state of agreement with other readers come across in the comments. They contain much information about how people feel about a certain topic. (Heinrich and Holmes, 2001, p. 2)

Rowe, Hawkes and Houghton (2008, p. 366) argue, that comments are a rich source of research data because firstly, the content is immediately available and reflects the current attitudes of the commenters, rather than remembered opinions generated after the fact. Secondly, comments are potentially available from very large numbers of respondents, and commenters may be similar to participants in other types of studies i.e. people who are willing to share their opinions. Thirdly, even if the comments are not representative, they do reflect the perspectives of a large segment of the population and are thus worthy of study. (Rowe et al., 2008, p. 366)

Zeich (2011, p. 96) gives reasons why people should be interested in user-generated content, and in the case of this thesis, user comments. The number of people who want to get their voice heard after reading an online article is unprecedented. Online commenting has created a public forum for open discussion, where people can comment behind anonymity. Comments are usually not edited and
they are spontaneous, informal, impulsive and even aggressive. Comment spaces are inclusive. As long as the writer does not break explicit rules, his comment is published. User comments are governed by broad social standards, for example decency, civility and taste are included in this social standardization. (Zeich, 2011, p. 96)

Zeich (2011, pp. 96-97) continues, that the success of story-specific comments indicates that the desire for people to express themselves depends on the topic of the news article. Although web designers try to separate the journalistic content and the user-generated content from each other, online articles without comments are rare and might even seem suspicious. For some users the comments might be as interesting as the journalistic text the comment relates or responds to. Comments are the most widely used method of participatory journalism. For writers, they offer the satisfaction of being published and having an opinion on the agenda of the day. Commenting does not require a lot of involvement or creativity. Even the topic is chosen for the commenter. Comments create controversy. They can be low in quality, their origin is not known and they provide dubious contribution to the public discourse. (Zeich, 2011, pp. 96-97)

According to Bossaller (2014, p. 235) comment sections of news articles can be a way for researchers to seek information on how the lay people feel about a certain issue. Tsagkias et al. (2010, p. 191) state that the number of user comments on a news article can be a sign of its importance, interestingness, or impact.

In their survey, Diakopulos and Naaman (2001, pp. 135-136) found, that people often find the comments of the news stories to be offensive in some way. It was also found that the topic of the piece of news has an effect on comment quality. Certain social issues which people feel strongly about, for example immigration, can evoke racist and rude commenting. Usually there still is a voice of reason to counterbalance the irrelevant or inappropriate commenting. There still are some fundamental problems in online news commenting, which are distortion, anonymity, personal attacks on sources or reporters and flaming and propagation of misinformation. (Diakopulos and Naaman, 2011, pp. 135-136)
Diakopoulos and Naaman (2011, p. 137) clarify the motivation for people to write comments. It is divided in to four motives. First one is information, which includes educating others, answering or asking questions, adding information, sharing experience, clarifying, noting missing information, balancing discussion, and correcting inaccuracies and factual errors or misinformation. The second one is personal identity, which includes expressing an intense emotion or opinion. The third one is entertainment, which includes injecting humour into the discussion and debate, and the fourth one is social interaction, which includes seeing the reaction of the community, persuading others, sympathizing, leaving condolences, applauding goodness or debating. The motivation for people to read comments is divided in to the same four sections. Readers want to get more information or additional reporting on the story, including updates to the story. They want to validate or compare their own personal opinion against community opinion. Readers think comments are funny entertainment. They want to see perspectives or views of the community, see how people truly feel on the matter, gauge political response or agenda, or to take the pulse of the community. (Diakopoulos and Naaman, 2011, p. 137)

In their study, Ziegele, Breiner and Quiring (2014, pp. 1117-1121; 1129-1132) interviewed people who comment on news stories. The interviewees found the comments of other users to be an essential component of online news stories. However, not every comment was equally interesting. There were factors that increased or decreased the interestingness of a comment, and the interviewees were not heterogeneous in their opinion. Not all of the factors are discussed here, but for example aggression, which means aggressive or insulting language use, provoked some to answer, and others felt that aggressive tone is not worth a reply. Although the interviewees preferred positive and inviting comments because responding to negative comments might not evoke meaningful discussion, negativity that dismissed the content of the news story, or previous user comment inspired replies as well.

Ziegele, Breiner and Quiring (2014, pp. 1117-1121; 1129-1132) continue that the interviewees found comments with a personal story related to the news item interesting. Irony or metaphors made the message unclear. In building discussion, asking questions or additional facts was found productive. Humour in comments is entertaining when reading and writing the comments. Because reading comments and commenting is time-consuming, the interviewees found short messages more
useful then long ones. Interviewees also mentioned that when replying to aggressive comments, it was easier to comment anonymously. Also rules or codes of conduct affected their enthusiasm to comment. If the comment was posted on the first third of the discussion, it was more likely to receive feedback than later comments. Controversy in comments, such as provocative questions, stereotyping, unfounded demands or exaggeration stimulated feedback, probably because they deviate from the public opinion. It is more preferable to users to engage in discussions when the topic concerns their own nation and has a large impact on a specified group. (Breiner et al., pp. 1117-1121; 1129-1132)

According to Robinson (2010, p. 137), the people writing to commenting spaces value the possibility to exercise free speech. They desire transparency, mutual respect and a self-moderating system, which judges the comments within the community. Comments are seen as an asset to any story. The commenting spaces are used to contradict a news story, to debate, to connect with other readers and to learn. (Robinson, 2010, p. 137) Tenenboim and Cohen (2013, p. 2) suggest that user comments have a role in constructing social and group identity, as social topics and controversies are prominent among highly commented upon news items.

In their study, Manosevitch and Walker (2009, p. 2) argue that the commenting on newspaper content is an important feature for readers. This is a way for lay citizens to express their opinion, perspective or expertise to the newspaper content. It also enables an opportunity for promoting public deliberation. The comments of the public and journalists could have implications for democratic and journalistic practice, because the readers engage with the newspaper, its journalists, and the content. (Manosevitch and Walker, 2009, p. 2)

According to a study by Milioni, Vadratsakis and Papa (2012, pp. 041-042) the commenters of news articles cannot be seen as co-producers of news content, meaning that they do not interfere with the journalistic functions, such as express new information on the matter. Users mostly express their opinions on public issues. Commenters were keener to challenge the viewpoints of the journalists and openly express their dissent; however, most of the commenters were supportive to the original text. (Milioni et al., 2012, pp. 041-042)
Arapakis, Lalmas, Cambazoglu, Marcos and Jose, (2014, p. 2003) state that engaged users mean high volume of user-generated content and comments posted to news articles. If a reader is interested in the content, user takes an active role and comments on it. This means taking the comments of other users into consideration. Commenting seems to be in accordance with the tendency of people to define oneself in relation to others. News portals have become interactive and user-generated content is important, which makes user-driven discussion around online news stories important to news providers as well. They wish people would be interested in their news content and hope for the people to engage. When people are interested and engaging, they spend more time on the site and post comments. Higher levels of engagement can be promoted, when news portals determine how to benefit from user-driven commenting. (Arapakis et al., p. 2003)

In his research, Santana (2014, p. 18-31) states a hypothesis claiming that in newspaper online columns, people act more civil when their comments are non-anonymous compared to when they are anonymous. He studied articles about immigration, which is a subject prone to debate. He selected several newspapers where commenters did not have to register to comment. Other group had to register with their Facebook-account. In his study Santana found that anonymous commenters were much more likely to write an uncivil comment than non-anonymous commenters. (Santana 2014, p.18-31)

Also Cao et al. (2012, p. 1) have done a study on anonymity. Their study suggests that the reduction of anonymity in awareness of others can affect the expression and interpretation of comments that are made during a discussion. Especially comments that are contrary to the opinion of the majority will be made, while at the same time decreasing the effect that those contrary arguments have on other group member’s opinions. In their study, anonymity led to more overall participation in discussions of ethical scenarios. (Cao et al., 2012, p. 1)

Freivogel and Hlavach (2011, pp. 23; 35-36) are concerned about the ethicality of the comments. News organizations want to have a vivid and diverse debate on public issues and offer their audience a way to participate. The researchers argue that news organizations should stay true to
their ethical guidelines and still allow the audience members the opportunity to comment on the news, even anonymously. This requires moderation. Comments are usually a blend of personal opinion and speculation which are not supported by facts and as a result, they often are incomplete arguments, oblique and sometimes confusing opinions. When a paper would not have an anonymous submission in their hard-copy edition, anonymity in the Internet is not forbidden. Freivogel and Hlavach suggest that anonymous postings should also be published only when they follow the codes of ethics designed to seek the truth, minimize harm and provide accountability. (Freivogel and Hlavach, 2011, pp. 23; 35-36)

2.2 Online commenting and vaccines

In this section I will go through two studies concerning online commenting and vaccines. Discourse analytical studies concerning the health phenomenon or other relevant discourse studies concerning the present paper were not found. Research concerning online commenting has been done relatively little. However there are studies that have used online news comments as their resource for data. In the following overview, I used studies that concerned vaccines and online news commenting.

Lei et al. (2015) examined perceptions of influenza vaccination of healthcare workers through online comments on news stories. They coded the comments from articles concerning their area of interest with thematic analysis. The popular themes were concerns about freedom of choice, vaccine effectiveness, patient safety, and distrust in government, public health, and the pharmaceutical industry. In addition the researchers categorised the comments by the content of the comment, including sentiment towards influenza vaccine, support for mandatory vaccination policies, citing of reference materials or statistics, self-identified health-care worker status and sharing of personal story. (Lei et al. 2015, p. 1-2)

Feinberg et al. (2015, p. 1-2) studied the online comments on Canadian news websites to see public perceptions of HPV and HPV vaccine. They used articles concerning HPV vaccination and the criteria for choosing an article was that at least one comment was included. The researchers analysed the comments to find common themes. The results were that the vaccine-supportive
commenters believed the vaccine is safe and effective. The negative comments included themes such as concerns regarding HPV vaccine safety and efficacy, distrust of pharmaceutical companies and government, and belief that school-age children are too young for HPV vaccine. There was also discussion of whether the Catholic Church has the right to inform health policy for students, and discussion often led to debates about HPV and sexual behaviour. The credibility of vaccine safety information was also doubted. (Feinberg et al. 2015, p. 1-2)

In their study Feinberg et al. (2015, p. 2; 5; 9) found that the majority of the commenters are not against HPV vaccination. It was also noted that because the messaging of the vaccine focuses on the vaccine safety and its use as a means to prevent cancer might facilitate its acceptance. However, the means to prevent sexually transmitted HPV infection is not in the focus. The positive themes included the prevention of HPV and cervical cancer. Prevention was seen as valuable. Other diseases that were preventable with vaccines were cited as a proof of vaccine effectiveness. It was considered that the vaccine should also be given to boys as it reduces cancer risk. There were comments mentioning the severity of HPV infection and cervical cancer, stressing that the treatment can be unpleasant, anxiety-provoking, expensive and painful. Vaccinating against HPV was seen to reduce disease burden, saving healthcare dollars. Disbelief against the refusal of HPV vaccination was seen in the commenters who had had personal experience with HPV infection or cancer. Vaccine benefits were seen as outweighing the risks, such as adverse reactions from the vaccine. As a reply to abstinence and fewer sexual partners in avoiding HPV, sexual activity was seen as a normal part of human behaviour. (Feinberg et al., 2015 pp. 2; 5; 9)

Feinberg et al. (2015, p. 9) also reported negative statements. Many commenters were concerned about pharmaceutical companies, stating that they produce faulty vaccines to worsen the health and create a dependence on medications. Other factor was that pharmaceutical companies manufacture unsafe vaccines for profit. Also the fast approval of the HPV vaccine by the Canadian government caused sceptical views, as it was allegedly due to pressure by pharmaceutical companies to accept the vaccine. It was also believed that health officials were linked with pharmaceutical companies and pushing their agendas, or working with government to create fear in the public to promote vaccine uptake. Safety issues were mentioned in the comments. The vaccine was seen as toxic and poisonous with undisclosed ingredients. The effects of these are not known. Other side-effects such
as chronic pain, fatigue, autism, blood clots, infertility and seizures were mentioned. (Feinberg et al. 2015, p. 9)

Personal stories about an adverse reaction following a vaccine or medication were shared in the comments. Also other medications which were eventually withdrawn were mentioned to further fuel the distrust of pharmaceutical companies. Since the vaccine covers four out of more than 100 HPV strains, it was seen as ineffective. The effectiveness was also doubted because not enough time had elapsed since vaccine introduction to determine whether it was preventing cervical cancer. Also the vaccine being effective for only five years and the current vaccination age being too young were mentioned. The negative commenters considered HPV to be harmless and cervical cancer rare, and saw alternatives for vaccinations. Call for change in sexual behaviour was apparent in the comments. HPV was seen as unnecessary is people practised abstinence, had fewer sexual partners or used condoms. (Feinberg et al. 2015, p. 9)

In the study by Feinberg et al. (2015, p. 10-11) the results indicated that the majority of online commenters are supportive of HPV vaccination, although anti-vaccine commenters are vocal in their opposition. The commenters had credibility issues with information sources such as YouTube of Wikipedia. The researchers also noted inaccuracies such as the perceived severity of HPV, the link between HPV and cervical cancer and the prevalence of cervical cancer. It was noted that those who participate are likely to have strong views on the topic discussed, thus they might not represent the general population. Anonymity might also have an effect in the way the respondents express themselves as they might act differently in face-to-face interactions. (Feinberg et al. 2015, p. 10-11)
3 INTERNET AS A SOURCE FOR VACCINE INFORMATION

This section discusses how the Internet effects the decision making process in health-related issues. Information is searched concerning vaccines. When people read online news they might look at the commenting as well, which can affect their decision making. In addition this section summarizes some of the earlier studies that have been done concerning vaccination discussion. The studies summarized in this paper are mostly focused on anti-vaccination activists that have their own forums and credible websites. Nevertheless the comments that have been studied in this master’s thesis have considerable similarities to the arguments of anti-vaccination activists and that is why they are included in this section. The anti-vaccination activists have provoked much conversation before. There have been studies about the organized anti-vaccination movement but the loose commenting that happens in the Internet has not been studied as much. I have also included a study that found parents to have positive views on vaccination.

According to Fox (2011, p. 2), the Internet has changed people’s relationships with information. In the data of this research, it is found that although people still firstly choose to go to doctors, nurses and other health professionals with their health concerns, online resources including advice from peers, are a significant source of health information in the United States. People get more and more information about health from the Internet. 59 percent of American adults use the Internet to search information for their health issues, although majority still turns to health professionals. 25 percent have read the commentary or experience of someone else concerning health or medical issues on an online news group, website or blog. (Fox, 2011, p. 2)

Madden and Nan (2012, p. 8) found in their study that people who read negative blog posts found the HPV vaccine to be unsafe and had more negative attitudes towards HPV vaccination. Reading negative information also lowered the intentions to receive the vaccine. The research concludes that anti-vaccine information online written by unfamiliar or anonym authors can have an effect on vaccination views. (Madden and Nan, 2012, p. 835)
In their study, Sharp and Wolfe (2006, p. 537) found that as Internet is used as a source of health information, public health authorities have been concerned about unscientific health information and opponents of childhood vaccination. In their research, searches on vaccination were made using search engines and different vaccination-related search words. Keyword “vaccination” had the highest percentage of anti-vaccination websites compared with searches with other keywords and any use of the term “vaccination” is likely to expose a parent to a great amount of anti-vaccination information. (Sharp&Wolfe 2006, p. 537)

According to Bean (2010), the content of anti-vaccination websites can be divided to four content attributes: Safety and effectiveness, civil liberties, alternative treatments and conspiracy theories or search for truth. These themes were also seen in the comments of the NYTimes.com article. (Bean, 2010, p. 1877)

Poland, Jacobson and Ovsyannikova (2009, pp. 3241-3242) wrote about the negative effects of an anti-vaccination culture. The speculation about vaccine safety has an effect on both individual and population-level health. People do not want any product to lead to any harm in any person, which is an impossible goal especially in medical science. Internet sites that post misleading and incorrect information are a source of information to some parents and this impacts the decision to receive vaccines. Nowadays that immunization is on a high level and infectious disease threats are not immediate, the parents do their homework online, and they start from the point of concern about vaccine side effects. The public no longer trusts in industry, government and public health in regards to vaccine safety and efficacy. Concerns arise, there is controversy and media questions vaccine safety, which causes people to doubt and not receive vaccines. Poland et al. continue, that we have moved from the evidence-based medicine to media-based medicine, at a cost of unnecessary morbidity. When people use the Internet as a source of information, all ideas are given equal credence, regardless of expertise. (Poland et al., 2009, pp. 3241-3242)

According to Printz (2013, pp. 2946-2947) the uptake of the HPV-vaccination has remained low. A growing percentage of parents will not have their daughters vaccinated against HPV even if physicians increasingly recommend vaccination. The reasons mentioned are that the vaccine safety
has had negative publicity; the vaccine has been for example associated with Guillanin-Barré syndrome and a clotting disorder. Other reasons are that people are not aware of how the vaccine works and public has been reluctant to acknowledge the reality of teen sexual activity. The initial concern makes the news but once a study that shows no association is released, it does not make the headlines. (Printz, 2013, pp.2946-2947)

Kata (2012, pp. 3778, 3780) explains that nowadays when people can share their medical experiences over the Internet, a new postmodern paradigm of healthcare has emerged, where power has shifted from doctors to patients. The expertise of doctors is questioned. She mentions that when parents start to seek information about vaccines or the safety of vaccines from the Internet, the first search results that search operators give with the most common search words are usually anti-vaccination pages. When reading these pages it is easy to start questioning the safety of or the need for vaccination. Even parents with no vaccine-related concerns can start doubting their decisions after visiting these pages. (Kata, 2012, pp. 3778, 3780)

Kata (2012, p. 3779) continues that the anti-vaccination activists can be convincing even if their claims lack the support of scientific research. The most common reason for parents not to vaccinate their children were fears that vaccines might cause harm or overload the immune system, thinking that the disease was not dangerous or their child was not at risk for the disease, believing that acquiring natural immunity for the disease was better than getting the immunity from vaccines, or that the vaccines simply do not work. These all are commonly used arguments by the anti-vaccination movement. They claim to be in favour of pro-safe vaccines, which means that they only want vaccines that are 100 percent safe. This is not the case with present vaccines. According to anti-vaccination activists vaccines include toxic ingredients and have side-effects. The health problems that have come after vaccination cannot be coincidence, but they are a straight result from vaccination. Anti-vaccination activists censor the dissenting opinions from their own community. They also release studies that have no scientific proof. In their opinion vaccine supporters are hired by the pharmaceutical companies. (Kata, 2012, p. 3779)
Poland and Jacobson (2012, pp. 860-862) have conducted a study about the three common claims anti-vaccination activists have against vaccines. The foundational argument is that vaccines are unsafe. This argument is supported by those who feel that they themselves or their close ones were harmfully injured by vaccines. The first claim is that when a baby receives vaccines, he gets an antigenic overload. This means that a baby gets too many vaccines too soon and is not capable of responding safely to the vaccine antigens given. The second claim is an unacceptable rate of autoimmune disorders, which means that vaccines can cause diseases such as type 1 diabetes and Guillain-Barre syndrome, even if there are no studies to support this causation. The third claim is that vaccines give less safe immunity than natural infections. As it is true that for example measles virus infection can provide a lifelong immunity to a person, it also causes death in about every 1 out of 3000 cases. Also people who cannot receive vaccines due to immune compromising illnesses are dependent upon high coverage rates of the vaccine and high levels of immunity in the general population, so-called herd immunity, for protection from natural infection. Poland emphasizes that these claims are false and there is clear and unambiguous data against them. (Poland and Jacobson, 2012, pp.860-862)

Although anti-vaccination activists and the negative vaccination information are visible on the Internet, many parents still believe in vaccines. In their study Chapman, Burgess, Hawe and Leask (2006, p.7242-7244) studied if mothers of infants responded to competing media messages about vaccine safety. Even if they were exposed to anti-vaccination material e.g. a damaged child, their belief in vaccination remained the same. Vaccination represents a way of controlling communicable diseases that are seen as frightening. Vaccination was seen as protection. The parents in this study trusted in health professionals, particularly doctors. Medical training was seen as a marker of trustworthiness. Also willingness to discuss risks and benefits of particular vaccines was important for the mothers. They wanted to be seen as informed and regarded as competent to make vaccine decisions.

Chapman et al. (2006, p.7242-7244) found that vaccination was also a way to represent wider social norms and values. Multiculturalism and their constitution of good parenting and the deviant behaviour of rejecting vaccines were met by some mothers with prejudice. Vaccination was socially reinforced through contempt towards vaccine defaulters, stereotyping parents who do not vaccinate
their children and respecting the role of the mother as a protector through adherence. Mothers also felt concern about the potential effect of anti-vaccine discourse on parents, as after being exposed to the anti-vaccination material, they worried if some of the mothers had changed their minds about vaccination. If a parent did not vaccinate a child, it was recognised as a decision which affected others. Vaccinating was seen as a benefit for the community, which rose above the benefit of an individual. The side-effects of new vaccines did not scare the mothers of the study; instead, there were demands for the best and latest model vaccine. In their study, Chapman et al. found that the parents in this study had a positive attitude to immunisation. (Chapman et al. 2006, p. 7242-7244)
4 CRITICAL DISCOURSE ANALYSIS

In this chapter, critical discourse analysis is discussed. People make sense of the world in different ways but mainly through language which is a discursive process. Language and social reality are related. Language plays an active role in the way people construct, understand and represent reality. That is why it can be said that people make sense of the world in a discursively mediated way. (“Critical discourse analysis”) My research is a qualitative study in the field of critical discourse analysis. The data of master’s thesis is analysed using critical discourse analysis (CDA) which is a foundational method for qualitative analysis. I will use the approach of Norman Fairclough to analyse my data. The discourses found in this study are data driven or inductive, as the discourses are drawn upon from the comments, not determined beforehand. The empirical study of relations between discourse and social and cultural developments in different social areas is to what CDA provides theories for. In this section I will first go through general information concerning CDA. Similarities and differences the different approaches to CDA have are presented next. I will then discuss the goals of critical discourse analysis. In section 4.3 I will discuss the term discourse in more detail. Finally in section 4.4 I present ways of analysing a text using critical discourse analysis.

The approach of CDA Fairclough (1992, p.72) has, is a text-oriented form of discourse analysis. It tries to unite three traditions. The first one is textual analysis within the field of linguistics. The second one is macro-sociological analysis of social practice. The third tradition is micro-sociological, interpretative tradition within sociology. In it, everyday life is treated as the product of actions of people, in which they follow a set of shared common-sense rules and procedures. Fairclough reminds that it is important to remember that the analysis of the linguistic features of the text inevitably will involve analysis of the discursive practice, and vice versa. (Fairclough 1992, p.72)

Fairclough (2010, p. 3) notes that in his view, critical discourse analysis has three basic properties. CDA is relational, dialectical and transdisciplinary. The primary focus of CDA is not on entities or individuals, but on social relations. Social relations are layered and complex. Fairclough explains that for example discourse can be seen as an entity or an object but it is a complex set of relations
including relations of communication between people who talk, write and communicate in other ways with each other. It can also describe relations between concrete communicative events and more abstract and enduring complex discursive objects like language, discourse and genres. Discourse and other complex objects such as objects in the physical world, persons, power relations and institutions also have relations. Fairclough sums that discourses are both internal relations and external relations with other objects. It can only be defined by analysing sets of relations. Social life constitutes of complex relations, and to it discourse brings meaning and making meaning. (Fairclough, 2010, p. 3) Fairclough uses the term “discourse” to refer primarily to spoken or written language use, though it should be extended to include semiotic practice in other semiotic modalities such as photography and non-verbal communication. (Fairclough, 2010, p. 92)

Fairclough (1992, p. 66) claims that discursive practice reproduces an already existing discursive structure and also challenges the structure by using words to denote what might lie outside the structure. With this statement, he distances himself from structuralism and comes closer to a poststructuralist position. (Fairclough, 1992, p. 66)

4.1 Similarities and differences in approaches to critical discourse analysis

According to Jorgensen and Phillips (2002, p. 71) critical discourse analysis provides theories and methods for the empirical study of the relations between discourse and social and cultural developments in different social domains. In this thesis I will use the approach of Fairclough, which consist of theoretical methods, methodological guidelines, philosophical premises and specific techniques for linguistic analysis. However the broader critical discourse analytical movement consists of several approaches. There are similarities and differences between them. Five common features can be identified in different approaches to CDA. (Jorgensen and Phillips, 2002, p. 60)

According to Jorgensen and Phillips (2002, p. 62-63) the approaches of CDA have similarities. The first feature is that the character of social and cultural processes and structures is partly linguistic-discursive. Texts are produced and consumed through discursive practise and they are viewed as
an important form of social practice. Social practice contributes to the constitution of the social world. It includes social identities and social relations. In everyday life, it is partly through processes of text production and consumption the social and cultural reproduction and change take place. Understanding the linguistic discursive dimension of social and cultural phenomena and processes of change are the aim of CDA. The second feature is that the discourse is both constitutive and constituted. Discourse is a form of social practice and it does both; constitutes the social world and is constituted by other social practices. There is a dialectical relationship between discourse and other social dimension. It contributes to the shaping and reshaping of social structures and reflects them. The third feature is that language use should be empirically analysed within its social context. Concrete, linguistic textual analysis of language use in social interaction is what CDA engages in. (Jorgensen and Phillips, 2002, p. 62-63)

Jorgensen and Phillips (2002, p. 63-64) state that the fourth feature the approaches of CDA have in common, is that the discourse functions ideologically. It is claimed that in critical discourse analysis, discursive practices contribute to the reproduction and creation of unequal power relations between social groups. These social groups can be for example women and men, ethnic minorities and the majority or the power relations can also be seen between social classes. These effects between social groups are comprehended as ideological effects. In CDA, the research focus is both the discursive practises which construct representations of the world, social subjects and social relations including power relations as well as the role that these discursive practices play in furthering the interests of particular social groups. The term critical comes to CDA because it aims to reveal the role of discursive practice in the maintenance of the social world, including those social relations that involve unequal relations of power. The fifth similarity is the critical research. CDA does not see itself as politically neutral. It is a critical approach which is politically tied to social change. CDA approaches take the side of oppressed social groups for the sake of emancipation. The aim of the critique is to uncover the role of discursive practice in the maintenance of unequal power relations. The overall goal of CDA is to harness the results to the struggle for radical social change. (Jorgensson and Phillips, 2002, p. 63-64)

Besides similarities, Jorgensson and Phillips (2002, p. 64) also note that there are differences between the approaches of CDA. Their theoretical understanding of discourse, ideology and the
historical perspective and methods for empirical study of language use in social interaction and its ideological effects have differences. For example Michel Foucault had an understanding of power as productive. In turn Ten Van Dijk has a sociocognitive approach, which deviates from most of the other approaches by being cognitivist. (Jorgensson and Phillips, 2002, p. 64, 91)

Jorgensen and Phillips (2002, p. 91) state that there are differences between approaches of CDA. Other critical discourse analytical approaches and the approach of Fairclough have differences. Main difference is his more poststructuralist understanding of discourse and the social. In his approach, the conception of discourse as partly constitutive emphasizes the empirical interest of Fairclough in the dynamic role of discourse in social and cultural change. The other approaches are against this with their tendency to regard discourse as a reflection of an underlying structure and also to focus more empirically on the role of discourse in social reproduction. The differences are seen in the fact that also the discourse analytical approach of Ten van Dijk is considered part of the school, although his socio-cognitive approach understands cognitive structures as mediating social and discursive practices. Van Dijk sees power as abuse, rather than productive as Michel Foucault. In the approach of van Dijk, power is always oppressive; it is used by certain interest groups and imposed on passive subjects. This conception stands in contrast to the concept of hegemony on which Fairclough draws. Hegemony is changing and incomplete. In hegemony, power is seen as negotiated and not only dominance. It is a process of negotiation. From this negotiation emerges a consensus concerning meaning. People can to a certain extent act as agents with possibilities of resistance. These competing elements existing able the seeds of resistance, since elements that challenge the dominant meanings provide people with resources for resistance. (Fairclough 1992, p. 93) Van Dijk has a tendency to neglect the possibilities of people for resistance. This is a consequence of his understanding of power. For example, his view takes for granted that people will accept racist messages. (Jorgensen and Phillips, 2002, p. 91)

An important difference between the approach of Fairclough (1992, p.64) and critical discourse analysis in general, and poststructuralist discourse theory is that in the former, discourse is not only seen as constitutive but also as constituted. The approach of Fairclough emphasizes that discourse is an important form of social practise. It both reproduces and changes knowledge, identities and social relations including power relations. At the same time discourse is also shaped by other social
practices and structures. Because of this, other social dimensions are in a dialectical relationship with discourse. Fairclough sees social structure as social relations consisting of both discursive and non-discursive elements. Social structure is seen as social relations also both in society as a whole, and in specific institutions. For example, the physical practice that is done when constructing a bridge is a non-discursive practice. In turn, for example journalism and public relations are primarily discursive. (Fairclough 1992, p. 64, 66)

4.2 Goals of critical discourse analysis

The intention of critical discourse analysis is to generate critical social research; research that tries to point out the existence of injustice and inequality in society. According to Fairclough (2010, pp. 4-5) CDA is an analysis of dialectical relations between discourse and other objects, elements or moments, as well as analysis of the internal relations of discourse. This type of analysis cuts through the conventional boundaries of disciplines and according to Fairclough, makes the analysis transdisciplinary. Transdisciplinary analysis should have a transdisciplinary methodology. Analysis is a theory-driven process of constructing objects of research for research topics. This happens by converting an object of research into research topic that is cogent, coherent and researchable research question. The research topic defines the transdisciplinary ways in which the topic is theorized. The theory can be a theory of discourse, or a political, sociological, media or other theory, depending on the topic. The transdisciplinary way of constructing an object of research allows various points of entry for the discourse analyst. A discourse analyst will focus not only in discourse but also on its relations with other elements and always in ways which accord with the common object of research. (Fairclough, 2010, pp. 4-5)

Fairclough (2010, p. 7) claims that the particular selection of methods for particular research project depends upon the object of research which is constructed for the research topic. In the version of CDA he works with, CDA has a general method as textual analysis has a dual character. Analysis is firstly interdiscursive, analysis of which discourses, genres and styles are drawn upon in a text and how they are articulated together. This is based on a view that texts generally draw upon and articulate together multiple discourses, genres and styles. Secondly CDA is a linguistic or a multimodal analysis of the different semiotic modes, including for example language, visual images and body language, and their articulation. (Fairclough, 2010, p. 7)
The critical aspect of analysis is what brings a normative element into analysis. It focuses on what is wrong with a society and how from a particular normative standpoint these wrongs could be righted or mitigated. Critique is grounded in values which are different for different people. Critique assesses what exists, what might exist and what should exist on the basis of a coherent set of values. Critical analysis aims to produce interpretations and explanations of areas of social life. These interpretations and explanations already exist because a necessary part of living and acting in particular social circumstances is interpreting and explaining them. Critical researcher will find these interpretations and explanations alongside with prior discourses found by other researchers. These discourses can transform and have an effect on social world. This means that a critical analyst is producing discourses when she produces interpretations and explanations of a particular area of social life. (Fairclough, 2010, pp. 8-9) Fairclough explains that critical discourse analysis aims to systematically explore often opaque relationships and determination between discursive practices, events and texts and wider social and cultural structures, relations and processes. CDA investigates how discursive practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power. The opacity of these relationships between discourse and society is a factor securing power and hegemony. With opacity Fairclough means that linkages between discourse, ideology and power may be unclear to those involved. (Fairclough, 2010, p. 93)

4.3 Discourse

Fairclough (2003, p. 2) states that his approach to discourse analysis is based on the assumption that language is an irreducible part of social life and that it is dialectically interconnected with other elements of social life, so that social analysis and research always has to take account of language. (Fairclough, 2003, p. 2) In critical discourse analysis, discourse can be seen as a form of social practice. This social practice both constitutes the social world and is constituted by other social practices. Discourse as a social practice is in a dialectical relationship with other social dimensions. It contributes to the shaping and reshaping of social structures and also reflects them. Discourse figures in three main ways in social practice: Genres, or ways of acting, discourses, or ways of representing and styles or ways of being. (Fairclough 2003, p. 26)

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Discourses are a way of representing aspects of the world: the material world and its processes, relations and structures, the mental world and its thoughts, feelings and beliefs, and the social world. Different discourses are different perspectives of the world and they are associated with the different views people have of the world. Discourses are one element of the relationships between different people. They can complement and compete with one another or dominate others. People use discourses as a resource when for example they cooperate, compete or keep separate from another. (Fairclough 2003, p. 124)

4.4 Analysis of a text

Critical discourse analysis deals with continuity and change in a more abstract and structural level, together with what happens in the particular texts. There is a link between these two concerns and it is made through in the way in which texts are analysed in critical discourse analysis. In addition to linguistic analysis, CDA also includes interdiscursive analysis, which means seeing texts in terms of the different discourses, genres and styles they draw upon and articulate together. (Fairclough, 2003 p. 3) Fairclough (2003, p. 8) states that he uses the term text in a broad sense. Written and printed texts such as shopping lists and newspaper articles are texts in the same way as transcripts of spoken conversations and interviews or television programmes. (Fairclough 2003 p. 8) In his earlier book, Fairclough (1992, p. 117) explains that interdiscursivity is a form of intertextuality. The term intertextuality refers to the condition where all communicative events draw on earlier events. Words and phrases that a person uses have been used by others before. Manifest intertextuality is a particularly pronounced form of intertextuality, where texts draw explicitly on other texts, for example by citing them. (Fairclough, 1992, p. 117)

According to Fairclough (2003, p. 3) texts have causal effects when they are elements of social events. This means texts bring changes for example in our knowledge, our beliefs and our attitudes. Texts also have causal effects upon, and contribute changes in, people, actions, social relations and the material world. One text can have various effects or no effects at all, depending on many other factors in the context, for instance on different interpreters. (Fairclough 2003 p. 3)
Texts have a causal effect in changing or inculcating and sustaining ideologies. According to Fairclough, (2003, p. 9) ideologies are representations of aspects of the world. They can be shown to contribute to establishing, maintaining and changing social relations of power, dominance and exploitation. This is a critical view of ideology, as ideology is seen as a modality of power. It contrasts with various descriptive views of ideology as positions, attitudes, beliefs and other views of social groups without reference to relations of power and domination between such groups. (Fairclough 2003, p. 9)

The approach Fairclough (2003, pp.10-11) has in texts as elements of social events is not only concerned with texts as such, but also with interactive processes of meaning-making. There are three analytically separable elements in process of meaning-making: the production of the text, when the focus is on producers, authors, speakers and writers, the reception of the text, when the focus is on interpretation, interpreters, readers and listeners, and the text itself. Meanings are made through the interplay between the elements of meaning-making. Institutional position, interests, values, intentions or desires of producers, the elements at different levels in text and the institutional positions, knowledge, purposes and values of receivers must be taken into account. In meaning-making both implicit and explicit elements in text must be considered. (2003, pp.10-11)

Fairclough (2003, p. 11) states that the interpretation of a text is a complex process with various different aspects. It is on the one hand understanding what words, sentences or longer stretches of text mean and understanding what speakers or writers mean. On the other hand it is a matter of judgment and evaluation. Judgment must be made on whether someone is saying something sincerely or seriously or not, whether the claims that are explicitly or implicitly made are true and whether people are speaking or writing in ways which accord with the social or institutional relations within which the event takes place. There is also an explanatory element to interpretation as people try to understand why someone is speaking or writing the way he is. Some texts require more interpretative work than others: some texts are transparent, others more or less opaque to particular interpreters. (Fairclough 2003, p. 11)
Fairclough (2003 pp. 129, 133) gives two ways of identifying different discourses in a text in textual analysis. Firstly, one can identify the main parts of the world, including areas of social life, which are represented. These are the main themes. Secondly, one can identify the particular perspective, angle or point of view from which discourses are represented. Fairclough introduces the most obvious distinguishing features of a discourse. Discourses are likely to be features of vocabulary, they word or lexicalize the world in particular ways. He points out that it is however more productive to focus on semantic relationships between words. According to Fairclough “Discourses can be differentiated in terms of semantic relations (synonymy, hyponymy, antonymy) between words – how they classify parts of the world - as well as collocations, assumptions, an various grammatical features.” (Fairclough, 2003, pp. 129, 133)

Fairclough (2003, pp. 130-131; 212-213) reminds that in a particular area of social life different discourses have vocabularies which may be partly different but are likely to overlap. Different discourses may use the same words but they might have a different usage they can be identified only through focusing upon semantic relations. Collocations are a one way of looking at this difference. Collocations are regular or habitual patterns of co-occurrence between words. Discourses can also be differentiated by lexical metaphors. Lexical metaphors are words which generally represent one part of the world being extended to another. Assumptions can be seen as potentially tied to particular discourses and as variable between discourses. Assumptions are the implicit meanings of texts. Assumptions can be divided into three types: existential (what exists), propositional (what is the case) and value assumptions (what is desirable or undesirable). Also grammatical features, such as the difference between generic and specific noun phrase, transitive and intransitive verbs and nominalization and a verb, characterize and differentiate discourses. (Fairclough, 2003, pp.130-132, 212-213)
5 DATA

This master’s thesis examines the communication that takes place in an online news website comment section. It is a form of computer-mediated communication and a form of user-generated content. As the present paper is a master’s thesis done for English Philology, the article for this paper was chosen keeping in mind the fact that the concentration was on articles from natively English-speaking countries. The article was found using Google search engine. The material studied for this paper is an article from the online version of the New York Times. The headline of the article is “HPV Vaccine Is Credited in Fall of Teenagers’ Infection Rate” and it is written by Sabrina Tavernise. It was published on 19th of June, 2013. This article was chosen based on the covered information, the number of comments left and the release date. The amount of comments was considered important as the analysis of this thesis will concentrate on studying them. The NYTimes.com is the number one individual newspaper site in the US. It has nearly 31 million unique visitors each month. (The New York Times media kit, 2015) My aim was to find an answer to my research question: What discourses the comments of HPV vaccination related piece of news create. With a large number of comments, the views of the public are better represented. The article reports that although about one third of teenage girls in the United States have received the three recommended doses of the HPV vaccine, infection with the viral strains that cause cancer have dropped in half. There is also a video which starts with a still picture of a nurse or a doctor vaccinating a young girl. (Tavernise, 2013)

On NYTimes.com, the comments were displayed with the username of the commenter and the date and time that the comment was posted. Overall, 384 comments were posted after the article. 130 of the comments are commenting the article and 254 of the comments are replies to these comments. About 80 comments are replied and 50 comments are detached commenting, which means that no one has answered or commented to a comment. The comment section is closed; therefore no more comments are published in this article. 58 people have written more than one comment. A total of 247 different pseudonyms have been used in the comment section. 39 pseudonyms have written one or more negative or sceptical comment. Most replies are to these comments. It must be noted that some of the comments might be so-called trolls, meaning that the commenter intentionally provokes
the other readers. However, it is impossible to know which comments are written with this intention in mind so it has not been taken into consideration while analysing the comments. 

Certain themes can be found repeatedly when analysing the comments of the articles. The commenters with positive attitudes think it is the responsibility of a parent to vaccinate his child and vaccine is a positive result of scientific research. Both positive and negative commenters express their opinion and give examples from their own life. The negative commenters have distrust of doctors, pharmaceutical companies and scientific research. People are also worried about the safety of their kids and the side-effects the vaccines might have. Many doubt that the vaccine is unnecessary and it is not effective enough. Most of the comments are blank statements without references.

5.1 Commenting in the NYTimes.com

When reading the comments, the reader can choose to read all comments, the reader picks or NYT picks. Other readers can recommend the comments, and the most recommended are the reader picks. NYT picks are a representation of a range of views and are judged the most interesting and thoughtful. The reader can sort the comments to begin from the newest or the oldest. (The New York Times, Help, 2015)

There are rules, recommendations and regulations concerning commenting for the NYTimes.com. Firstly, the page is interested in articulate and opinionated remarks that are relevant to the article. Criticism and unique insights are welcomed. Personal attacks, obscenity, vulgarity and otherwise offensive language are not tolerated. The comments space is created for readers to exchange intelligent and informed commentary. The comments are moderated, which means the NYTimes.com decides which comments are published and which are not. Only comments written in English are accepted. (The New York Times, Help, 2015)

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1 Comments retrieved from: http://www.nytimes.com/content/help/site/usercontent/usercontent.html
Commenters are required to complete a quick registration process. They must choose a display name and tell their location. These items are displayed once a person writes a comment on NYTimes.com. The commenters are encouraged to use their real names because this carries on more engaging and respectful conversation. (The New York Times, Help, 2015)
6 VACCINATION DISCUSSION THROUGH ONLINE NEWSPAPER COMMENTING

In this section I will introduce the discourses I found in the comments of the NYTimes.com article “HPV Vaccine Is Credited in Fall of Teenagers’ Infection Rate” and analyse some of the comments in more detail. I shortly comment the people who participate in vaccine discussion. I will also consider whether commenting can be counted as community building. My research question is: What discourses the comments of HPV vaccination related piece of news create. I will also consider if commenting is a means of building community. Because the approach of critical discourse analysis is normative and ideological, I will see if there are social wrongs and possible ways of righting or lessen them regarding the case of HPV vaccine commenting.

The release of HPV vaccines and the group they are targeted to, young girls and boys has created much conversation concerning their safety, efficacy and necessity. The content of the article itself is controversial. Vaccines have done a lot of good but studies have also presented negative results. There is a continuous battle of who is right and who is wrong. The people who in these conversations support vaccination, do not even try to understand the view or concerns of the marginal group, who either do not want to vaccinate their children or are worried about how vaccines might affect the health of their children.

When examining the comments, it is clear that they are written in an informal style and colloquial terms have been used. The comments have spelling mistakes. The commenters have linked to different Internet pages 22 times in the comments. The links lead to pages which give more information on vaccines. Nine links lead to the Internet pages of Centers for Disease Control and Prevention, CDC. CDC works to protect America from health, safety and security threats. These links are provided to give affirmation to sceptical commenters. (www.cdc.gov)
Commenters who support HPV vaccine focus their argumentation on evoking danger or threat, statistical evidence, authority or expertise, parental authority and the public good which means that when you vaccinate, you do not only protect your child but also other children. The positive commenters believe that HPV vaccination is a medical achievement and people who refuse vaccination should be ignored. Negative commenters focus on safety, their own research, and protecting the children. The mistrust and financing of vaccination research are also mentioned. Some negative commenters question the seriousness of the HP-virus. Critical conceptions of the vaccine also include the side-effects of the vaccine and the unnatural ingredients of the vaccine.

Abstinence and sex-education are mentioned several times in the comments. Others think abstinence is the way to avoid HPV, others feel abstinence and sex-education are both needed, and some feel that sufficient sex-education and vaccination will help. Parents are worried that vaccination might lead to irresponsible sexual behaviour. However, some commenters reminded that HPV is very common and even abstinence might not prevent infection; marrying someone who is infected, sexual assault or rape can still occur. There were also debates about whether the HPV is dangerous and that the vaccine is not needed. Others felt that if something as simple as vaccine can prevent cancer, it is definitely worth taking. Vaccinating boys was met with positive attitude. Commenters felt that vaccination will protect their future wives and also the diseases HPV causes in men.

6.1 Participants

It is interesting to consider who the participants are and why do they want to write a comment. Do they feel they belong to a community when they write? Is the topic of special interest to them? When people question the content of the article do they feel they are communicating with the writer or the publication itself? People also want to see the opinion of other people. With these comments it seems that some of the people had not actually read the article but wanted to comment on the issue nevertheless. Some people comment almost identically more than once. It can also be seen that when there are this many comments, not everyone reads all of them before submitting their own comment. It is mostly the sceptical comments that get replies. About 80 comments have gotten more than one reply. Commenting can also be detached, when no one has commented to what the commenter has said.
In this thesis I have looked closer at some of the comments. People with negative views towards vaccination are in a minority in these comments and in the whole society. Their voice is however loud and they make a believable case. Positive commenters prove their point by stating facts, commenting on the safeness of the vaccine and claiming that it protects the children. In many of the vaccine-sceptical comments the tone is defensive because the others commenters have somehow questioned the reasons given to refuse vaccination and the positive commenters can use offensive or even rude terms when referring to the vaccine sceptics.

CDA investigates how discursive practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power. The opacity of these relationships between discourse and society is a factor securing power and hegemony. (Fairclough, 2010, p. 93) In these comments the power relations are seen in how people use language, both sides wanting to be right and trying to make the other party to see how their views are somehow wrong.

6.2 Discourses

From the comments, I found three main discourses that arose repeatedly. The first one is parental discourse. What do the commenters qualify as proper parenting? How people justify their parental decisions? I also consider the effect of religion and morality in decision making. The second one is societal discourse. With this I mean the effect vaccinating or not vaccinating has on a society and how people justify their vaccination decisions and their effect on other people. I also include the comments that refer to pharmaceutical companies, well-known people, the article itself, and other officials in this discourse. From a societal point of view, how do the commenters see themselves? Are negative commenters oppressed or misunderstood? Are positive commenters better than others? The third discourse I found was medical. In it I included the comments with medical jargon, the comments related to the vaccine qualities as well as references to other studies. It must be noted that other discourses can be found as well. Some of the discourses in the data were overlapping and more than one discourse was present in one comment. Because I wanted to represent a comment and its reply in the same context, the overlapping is even more visible. However, in this manner it is easier to see what type of language the ones opposing the vaccine and the ones supporting the
vaccine use when they comment to each other. According to Jones (1999, p.xii), everyone is connected with the Internet. The experiences people have online are somehow connected to the experiences people have offline. The Internet is connected to our social lives. It can be then assumed that the commenting the people do in this comment section and the comments they read can have an effect on the way they think of HPV vaccination.

6.2.1 The ideal parent

One of the key areas in these comments is parenting. Parents are the ones making the vaccination decisions. HPV vaccines and vaccination in general are seen as an indicator of good or bad parenting. Those who support vaccination see vaccine opponents as bad parents and vice versa. The participants use discourses concerning parenting mostly to represent the importance and responsibility the parent has when it comes to the health of the children. Personalized perspectives are used when commenters tell about their own experiences concerning health and vaccines or advice others. The comments against vaccines and the comments of cautious parents are sometimes met with agreement. However, mostly the negative or sceptical comments are answered with sarcasm, additional information, dismissal and in one way or another proposing these commenters are stupid.

The Internet research the parents do to acquire vaccine information can lead to vaccine-negative attitude. Pseudonym “Jennifer” writes how she has done her research and gives reasons why HPV vaccine is bad for a child. Pseudonym “Nuschler” gives his reply. Below I will first comment on the comment of “Jennifer” and second the comment of “Nuschler”.

(1) Jennifer: “I have done my research. Sound research. This is just another in a huge roster of overhyped, overprescribed, widely misunderstood, largely ineffective and often toxic pharmaceutical products. As the lead researcher of Gardasil points out, pap smears are equally as effective as this product and with none of the frightening side effects. I wouldn't let this shot near my kid under any circumstance, and neither should you.”

(2) Nuschler: “What? Just where have you been doing your "research?" Michele Bachmann's website? A pap smear does NOTHING to prevent the HPV virus. It will pick up early signs of cervical cancer but that is WAY too late! We need to PREVENT the virus from invading the tissue. It is a completely safe vaccine that
should be given to both boys and girls. Please read the original research in a "peer review" journal: The Journal of Infectious Diseases.

In the comment of pseudonym “Jennifer” uses the pronoun “I” as she starts her comment by referring to personal opinion. The use of adjectives such as “overhyped” and “overprescribed” are added to further emphasize the uselessness of pharmaceutical products. She uses the adverb “often” to stress the toxic nature of medical products. “Jennifer” mentions the lead researcher of Gardasil, Diane Harper. She is mentioned to add reliability to the comment. An expert must know what she is talking about and she has done her research as well. However, no references are cited. This might mean that she has not found the information she refers to in the comment from any of the official health sites. She concludes her comment with a parental remark and an advice or a command. Using “I” again she stresses her opinion. She uses the possessive form “my” to imply that she would not vaccinate her child with this vaccine. The ending: “…and neither should you.” refers to other parents, who should not vaccinate their children either. With “I”, “my” and “you” she shows that there are two sides; those who vaccinate and risk the health of their children, and her, who is right. In this comment, the child is a passive agent, who has no say in this matter. There is overlapping of discourses in this comment. Both societal discourse and medical discourse are activated. Wider distrust of pharmaceutical products could have an effect on the society. Medical discourse is apparent in mentioning the side-effects and the lead researcher of Gardasil. Gardasil is the name of one of the HPV vaccines and lead researcher of Gardasil refers to Diane Harper, who was one of the scientists developing the vaccine.

Pseudonym “Nuschler” is quick to judge the comment “Jennifer” has left. He starts his comment by simply asking “What?” to emphasize his disbelief. In the next sentence “Nuschler” uses apostrophes around the word “research” to imply that no actual research has been done, or the information has been gathered from unreliable sources. He then sarcastically mentions that perhaps pseudonym “Jennifer” has done her research on the website of Michele Bachmann. Bachmann is a Republican conservative politician, who publicly spoke against the vaccine, accusing it caused, among other harm, mental retardation. (Gann, 2011) Bachmann is mentioned in the comments several times, mostly negatively. However it shows how a public person can effect in the decision making process of lay people. Even if her statement was later considered as inaccurate there still are people who are asking why she would have said this if it was not true. Pseudonym “Nuschler” goes on to overrule
the statement “Jennifer” makes about pap smears being as effective as the vaccine in preventing HPV, using capital letters in the pronoun “NOTHING” to emphasize the non-existent effect pap smears have in preventing the virus. Pseudonym “Nuschler” uses the pronoun “we” when he talks about preventing HPV. With it, he refers to everyone, especially parents, as he later writes that the vaccine should be given to boys and girls. However, it does not exclude pseudonym “Jennifer”. He also uses capitalizations in the words “WAY” and “PREVENT” to further emphasize how the vaccine is the only actual way to prevent the HPV from spreading. Pseudonym “Nuschler” completes his comment by stating that the vaccine is safe. He uses the sentence modifier “please” to plead to “Jennifer” that she should read her vaccine information from real sources, such as The Journal of Infectious Disease, which is a global journal for original research on infectious diseases. The comment “Nuschler” has left completely overrules the comment of “Jennifer”.

The comment from pseudonym “Nuschler” is only one of the replies “Jennifer” received. In all, seven people replied to her comment, which in this data is a considerable amount of replies. According to Ziegele, Breiner and Quiring (2014, pp.1117-1121; 1129-1132) aggression provoke some to answer. Negativity that dismissed the content of the news story also inspired replies. Exaggeration stimulates feedback, probably because it deviates from the public opinion. The use of adjectives in the comment of “Jennifer” suggests that she has strong, even aggressive opinions about the vaccine. She does write about the HPV vaccination, but her comment does not actually refer to the content of the article. Her reply is an exaggerated and heated comment, not outlined reasonably. In all, pseudonym “Jennifer” has written nine comments in this comment section. All of the comments have similar argumentations. Pseudonym “Nuschler” has written 18 comments. His comments are answers to vaccine negative or sceptic comments. They offer additional information, personal views and sarcastic remarks.

Pseudonym “amy” has done her research as well. She mentions additional information parents should pay attention to. The tone of the comment is threatening. Pseudonym “PeteH” sharply answers her comment. He obviously has strong opinions about those who are against vaccines:

(3) amy: “To Gain perspective on why one would choose to not vaccinate, please watch The Greater Good or read the book, The Age of Autism… There is a price that we are paying by giving our children so many vaccinations, and indeed there are many scientists who are also questioning this practice.”
Pseudonym “amy” uses the sentence modifier “please” to plead to parents. “Please” could also be coded as an imperative. She wants people to watch “The Greater Good” which is a documentary. It has personal stories of the victims of vaccine tragedies (www.thegreatergoodmovie.org). “The Age of Autism” is a book by Dan Olmstead. The websites of the Amazon describe the book as “A ground-breaking book, THE AGE OF AUTISM explores how mankind has unwittingly poisoned itself for half a millennium”. (http://www.amazon.com/The-Age-Autism-Medicine-Man-Made/dp/B0055X6B9G) As both of these pieces of work seem very believable, it is easy to see how parents could start doubting their vaccination policies. After asking the parents to get acquainted with the provided information, it is easy to threateningly say that vaccinating comes with a price. By using the subjective “we” and the determiner “our” when referring to children, “amy” makes it clear that she means all parents and includes other commenters to be a part of the better knowing parents. To conclude she refers to scientists who also question vaccination but gives no citations.

Pseudonym “PeteH” starts his reply with a remark that the link between autism and vaccination has been refuted. He uses terms “wilfully ignorant” and “bare-faced liars” to refer to people who still spread the information. Both terms are offensive. “Wilfully ignorant” can be interpreted as a euphemism to stupid. Pseudonym “PeteH” has used the adjective “bare-faced” to further characterise the worthlessness of the liars still spreading this information. He uses the term “people” but as it is pseudonym “amy” he is replying to, “PeteH” is directly name-calling her. Pseudonym “PeteH” goes on with his opinion on multiple vaccinations. He uses the noun “bunkum” to belittle the writings of “amy”. Lastly he compares the vaccine antigens to the “foreign material” we inhale daily but does not name a source for this information. This is done to make “amy” realise the scale of toxin amount in vaccines and also to belittle the argument she made. Overall, the comment of “PeteH” is completely trying to override the comment of “amy”. The comment of PeteH could be classified as a part of societal discourse. In order to better represent how the commenters can reply to each other, it is included in this discourse.
Besides parental concerns, moral behaviour which refers to abstinence is often mentioned in the vaccine sceptic comments. Abstinence or condoning from sexual behaviour before marriage is heavily linked to religious beliefs. Parents forward these ideologies to their children. In the sceptical comments that handle the sexual behaviour of teenagers, parents are advised to encourage abstinence. The parents who vaccinate their children are seen as incapable of forwarding the right behavioural manners. However the commenters who support vaccination either see religion and vaccines as two separate matters or consider religious people as ignorant on the whole. To vaccine supporters abstinence is an outdated and unworkable method of sexual education. Religion is also a societal matter but I decided to consider the comments linked to this area as a part of the parental discourse. Because the comments are more about parents educating their children than directly linking the mentioned moral behaviour to religion, I see them as a part of this discourse.

Pseudonym “Thom McCan” has written two comments concerning moral behaviour. His point is that when children do not have sex, it is impossible to get HPV infection. In the comment below he is replying to and earlier comment about babies and Hepatitis B vaccination.

(5) Thom McCan: “(--) Look how much money we will save—as well as our children—if we give them a moral base to work from by adults setting the moral example. Not with statistics that reflect that “Ninety-five (95%) percent of all Americans have sex before marriage. About half of all young people begin having sex by age 17.”*

*Debra Hauser, president of Advocates for Youth, a liberal organization.”

He later continues as a reply to a comment that encourages parents to get their children vaccinated and as a result HPV caused cancers would disappear. To this, pseudonym ACW has a reply:

(6) Thom McCan: ”Better yet; imagine a world where adults and children behaved in a moral manner.”

(7) ACW: “Thom, I'd also like to imagine a world where everyone could fly, and a world without war, and without pollution, and where everyone was kind to animals. A world without cancer, in fact. However, we live in this world, and young people especially, though not exclusively, are only flesh and blood. They were having sex in my mother's day, and my grandmother's day, and they will continue to have it. That's assuming your definition of 'moral' behaviour jibes with mine. Mine does not include
one where the reaction to cancer is ‘that'll larn 'em, darn 'em!’ In addition to which, not all sexual encounters are voluntary; and surely a girl who is raped or coerced does not deserve cancer in addition.”

“Thom McCan” is talking directly to parents. In comment (5) he also uses the subjective “we” to refer to all parents and the determiner “our” before children. Parents should be able to give an example that will not lead to teenagers having sex. He uses the modal verb “will” to mark the future and avoid doubt. He says that this moral example helps to save money. What he means by that is unclear. There are several options for example saving the cost of the vaccine, saving the cost of treating people with sexually transmitted diseases and saving the cost of other harm that sexual behaviour might cause? The use of the adjective “moral” is interesting. It seems that he uses the word as a euphemism for having sex. Moral behaviour is preferable, admirable and proper parenting. He claims that this is the behaviour that parents should set. Is the correct moral example to show that the only way to go is abstinence? The only time the word “sex” is mentioned, is when he quotes to someone else. Maybe he sees moral education as a wider context than only sex education, although in the case of HPV, it is probably what he is implying to.

He concludes his comment number (5) with a statistic from the president of Advocates for Youth, which is a liberal organization that provides for example sexual education (http://www.advocatesforyouth.org/). Apparently he is trying to say publishing statistics that show young people are having sex will encourage immoral behaviour. It is strange that in the United States, where it has been shown that abstinence only-education does not work, some people are still in favour of it. Having sex is seen as something bad or sinful, only suitable for marriage. “Thom McCan” sees moral behaviour and educating kids to act morally as proper parenting. His comments suggest a higher level semantic relation: Problem is that people have sex before marriage and can get infected with HPV. Solution is abstinence before marriage.

The reply of pseudonym “ACW” starts sarcastically with him listing things that seem as impossible to him as teenagers not having sex. His point is that teenagers will have sex no matter the education or scare tactics. Pseudonym “ACW” also asks whether his definition of the term “moral behaviour” is the same as the definition of “Thom McCan”. He implies that “Thom McCan” might see cancer
as a result or consequence of immoral behaviour and that will teach the young people a lesson of what having sex might lead to, which is a strong accusation. He ends his comment with a remark of not all sexual encounters being voluntary and how vaccinating will also protect these girls. Pseudonym “ACW” uses an additive word “and” between the last two clauses. He wants to stress how wrong “Thom McCan” is by judging the vaccine as useless. Surely no one can consider that a victim of a rape is somehow responsible for her contraction.

People who support vaccination can comment quite rudely to the people who worry that the vaccines might have an effect on the health of the children. Pseudonym “NYLawyer” writes his opinion about parents who do not vaccinate and how people should react to HPV vaccination. Pseudonym “jen” answers to the comment, defending her views:

(8) NYLawyer: (--) --The anti-vaccine crowd is comprised of society's most dimwitted parents, and gets attention because of the pathetic "celebrities" whose personal tragedies make them want to believe that their child's autism is the result of an exogenous factor like a vaccine rather than, say, their decision to have a kid at 40 or just plain random luck. Other than these deplorable outliers, most parents have been persuaded that their kid needs to be vaccinated against Polio, Tetanus, etc. because the consequences of a failure to do so can be promptly tragic. But when the HPV Vaccine came out, the pitch was, "Look, we can prevent your kid from getting an STD and, later in life, cervical cancer!!" Wrong approach. The right approach is to position the vaccine as a "Cervical Cancer Vaccine" which isn't likely to be effective in everyone but will, for large numbers of girls, keep them from having to have their uterus cut out later in life. It's a gift a parent can give their kid now, when they are young, so that they never have to worry about it as a teen or adult. Perception problem solved. Takes away all the stupidity about "My kid isn't sexually active. He/she is a little angel." Just make it a standard vaccine for protection later in life that you make sure you bless your kid with now.

(9) jen: “Just because someone is against the vaccine or in my case want to wait and see what happens to the girls when they start having babies, does not make me dimwitted, it makes me cautious. Look at DES babies from the 1960's, myself being one of them. Is it possible as a lawyer you would LOVE everyone to take the vaccine so when/if something goes wrong in the future you will be there making money representing the victims? And by the way, I am not anti vaccine, I vaccinated my children.”

Pseudonym “NYLawyer” begins his comment by saying that the parents who do not vaccinate are “dim-witted.” He also uses the term “deplorable outliers”. The term implies that these parents are
not very modern or rather believe the wrong authorities and unreliable information. He clearly states his opinion about the stupidity of these parents, not giving their beliefs any excuses. He blames celebrities for the coverage of the anti-vaccine activists. They get publicity with their personal stories, where children are autistic because of vaccines. Personal stories are in fact a powerful way to effect people, especially if the person telling the story is a celebrity and it gets publicity. However, pseudonym “NYLawyer” does not reveal the names of the celebrities he is referring to. It is easy to see from the comment that “NYLawyer” has a strong opinion and he believes he is right.

Pseudonym “NYLawyer” then criticizes the way the HPV vaccine was first represented; it is not a cure for all, but can prevent cervical cancer. He uses strong descriptive language such as: “…keep them from having to have their uterus cut out later in life”. This type of language is probably used to try to wake up parents who still have doubts about the vaccine. Pseudonym “NYLawyer” mentions the vaccine is a gift a parent can give their children. By this he claims that vaccinating is proper parenting. He also uses the noun “gift” as a metaphor for the vaccine, to make the vaccine seem even more valuable. Pseudonym “NYLawyer” sees that his view solves the perception problem. He refers to parents who think that their children are not sexually active yet and that is why they do not need the vaccine. However, his perception does not remarkably differ from any other; he only suggests that HPV should not be linked with an STD. Lastly he interestingly uses the religiously linked verb “bless” to when he commands parents to give the vaccine to a child. This is possibly his way of persuading the religious people into seeing that the vaccine does not rule out the religious beliefs.

In her comment, “jen” wants to clarify that not giving her children HPV vaccination makes her a cautious parent, not stupid. The characterization of the “NYLawyer” as some parents being “dimwitted” in quality in the earlier comment makes “jen” act defensively. It is also a way of dividing the commenters into two teams, which both believe in their own case. At the end of the comment “jen” also points out that she is not against all vaccination. Cautious behaviour is one of the justifications for not vaccinating. Pseudonym “jen” backs up her cautiousness by a personal story. She is a DES baby. DES is a synthetic oestrogen that was given to women and pregnant women to supplement a women’s natural oestrogen production. It was later discovered that DES
can harm a child in the womb. (CDC, About DES) She implies that HPV vaccination might have an effect on the babies of HPV vaccinated girls. Pseudonym “jen” connects her story with the comment of the “NYLawyer”, vaccination supporter, and asks if he is a lawyer who has money on his mind. Her conclusion is a bit far-fetched because she has no information about the earlier commenter. On the other hand this shows how personal experiences effect the decision making process. When talking to the earlier commenter, she uses capital letters in the word “LOVE” to emphasize how a lawyer would like, and benefit from, the side-effects of the vaccine. She also uses conjunctions “when/if” to imply the possible harm the vaccine might cause. Using the conjunction “when” before “if” shows that “jen” is quite certain that this vaccine has its downsides.

Pseudonym “India” has some of the same justifications in her comment. It seems that the vaccine being new to the vaccination program makes people wonder about the safeness:

(10) India: “I’m not a part of the religious right, nor am I anti-vaccination - just a grandmother. I have some concerns about giving this vaccine as extensively as recommended without further study of the long-term effects of the vaccine. As women, we were all told we MUST take hormone replacement therapy drugs for the rest of our lives. Guess what - a few years later, we were warned to take as little for as short a time as possible due to unexpected long-term side effects and the lack of any of the long-term promised benefits. When these are children we’re discussing, should we not be a bit more cautious about vaccinating virtually all 12 yr old boys and girls?”

She first excludes herself from the two groups that receive most critique in the comments: Anti-vaccination activist and religious right. She then personifies herself to being “just a grandmother”, which implies her status as a concerned adult. The use of adverb “just” further implies that she has no views that the majority is against, such as religious views or anti-vaccination views. She is merely concerned. “Grandmother” refers to an older person, a person with experience. “India” is worried about not knowing the side-effects and doubts that there has not been enough research done concerning them. It seems pseudonym “India” thinks that children are only used as a part of a big medical experiment as these vaccines are given to children and they have not been researched enough. She then uses the hormone replacement therapy drugs as an example of how doctors change their minds and what is first considered as safe turns into something dangerous. With “Guess what” she provides herself with the opportunity to answer her own question. The presupposition therefore is that the self-response must be true. Pseudonym “India” also uses the
The pronoun “we” is used to refer to other commenters and parents or adults as a group. The adjective “cautious” is used as well. She points out that the vaccine is given to children. It is children the adults have to protect, therefore cautiousness should be practised. However, pseudonym “India” does not consider that vaccinating might also have positive outcomes. In their study, Diakopoulos and Naaman (2011, p. 137) clarify the motivation for people to write comments and the comment from “India” has several of those motivational features. She asks a question which can be seen as an invitation to reply to her. The use of negative question also presupposes a certain answer. Pseudonym “India” shares experience by expressing an intense opinion and persuades others to answer by expressing her concerns.

People argue whether or not it is responsible to vaccinate children and how this has an effect on their future. Children can decide for themselves whether they want the vaccine or not, but usually they do the decision together with their parents. HPV vaccines are given to young and adolescent and usually it is the parents who search for the information on the Internet. It is easy to find information that is written by the anti-vaccination activists and the scientific articles may be hard to find and difficult to read.

Parents who refuse to vaccinate their children are acting to their best knowledge and being cautious. Also the probability of contracting HPV or the dangerousness of the virus is seen as less risky than taking the vaccine. Raising children in a moral way is seen as an option for the vaccine. Examples of earlier medical failures are used by the commenters to prove their point. The commenters make their message personal by using the pronouns “I” and “we”. With the usage of these pronouns they include the other commenters to the same groups as they are a part of: Concerned adults and parents. Commenters who support the vaccine often use offensive terms when referring to commenters who do not want to vaccinate. Vaccine supporters give their own parenting advise, use sarcasm in their comments and try to prove the information given by the other party as being wrong by either giving examples of how their information is incorrect, stating their own factual information without listing sources or by providing links that have additional information. Parents who comment wish to make their own opinion heard. They want to hear the opinion of others and possibly have an effect on the vaccination decisions of other parents.
6.2.2 Societal discourse

From a societal point of view, vaccinating children has an effect on the society. Vaccinating provides herd immunity, which means that when a certain percentage of population is vaccinated, the diseases can disappear and the ones who might have a certain disease, cannot spread it to others because of the immunity the vaccine provides. According to the article, the rate of the infections caused by the dangerous strains of HP-virus can be dropped with the HPV vaccine. However, the vaccine is not given to all children for several reasons and it prevents the disappearance of the HP-virus. In these comments people justify their vaccination decisions to other people. Because vaccine sceptics are a minority in this group, they can feel oppressed or misunderstood.

The societal discourse is activated in the distrust or trust of pharmaceutical companies. Others see them as untrustworthy, only looking for financial victories. Others believe pharmaceutical companies do valuable work in preventing diseases. Pharmaceutical companies are said to have connections in the political, scientific and journalistic field. People who doubt vaccines often lack trust on pharmaceutical business on the whole. There are also comments that concern the content of the article. I have included them in this discourse as well. Although critical stance on the media is not a negative matter some of the comments are often linked to justifications in the vaccine issues.

Pseudonym “squeaky10” has several reasons to doubt the vaccine. His comment has all the elements that I have listed as a part of societal discourse.

(11) squeaky10: “[--] --As always, you should follow the money. Merk has the potential to make a huge amount of money if we mandate it. Governor Perry is a pig! His wife was taking speaking fees from Merk so was his chief of staff, his family was personally profiting from the vaccine

 -from the NYTs-"In Texas, Gov. Rick Perry recently issued an order that girls be vaccinated. But some legislators are trying to overturn the order, with some opponents complaining because the governor’s former chief of staff is now a lobbyist for Merck. State lawmakers are scheduled to hold a hearing Monday on a bill to rescind that order."

"Even some who support use of the vaccine question the rush and the vaccine’s high cost — about $400 for the three-shot course." So, ask yourself a question who did the study and by whom was the study funded? Most medical journals are hacks for the pharma industry.”
Pseudonym “squeaky10” starts with the question of money. He mentions Merck, which is the company manufacturing HPV vaccine. He sees the vaccine as a way for the company to make profit. He uses the noun “potential”, the conjunction “if” and the pronoun “we”. The commenter sees that people have not yet allowed Merck to make profit and with this sentence suggests people still have time to refuse the vaccine. Merck profiting from the vaccine is seen as a bad thing, but “squeaky10” does not tell why a company that sells pharmaceutical products should not be able to profit from what they sell. There are similar remarks concerning pharmaceutical companies in other comments as well. It almost seems the commenters feel pharmaceutical companies are involved in criminal activity. Pseudonym “squeaky10” has cited a text from The New York Times. According to Fairclough (2003, p.43) intertextuality is a text or a set of texts that are potentially incorporated into the text. In this case the other text is a specific citation. He uses the text to build his negative argument.

Pseudonym “squeaky10” uses a lexical metaphor and insultingly calls “Governor Perry” a pig and uses an exclamation point to emphasize the angry message of his sentence. He means the governor of Texas, Rick Perry, who supported the vaccine. With the use of a strong metaphor like this the writer wants to point out that in his opinion, there are untrustworthy connections between politicians and drug companies, convincing the reader that this person is unethical. According to Fairclough (2003, p.131) discourses can also be differentiated by lexical metaphors. Lexical metaphors are words which generally represent one part of the world being extended to another. Pseudonym “squeaky10” continues his comment with a citation from the NYTimes.com, which explains his outburst. The second citation might be from the same article but it is unclear. He finishes his comment with an order and a leading question which he then answers in the last sentence. Pseudonym “squeaky10” has an assumption that medical journals are not objective or trustworthy but are paid by the pharmaceutical companies to publish information that best suit their purposes. In this comment, every actor is involved in criminal activity and conspiracy. Pseudonym “hen3ry” writes among other matters about the good the pharmaceutical companies have done. Pseudonym “neal” replies to this in a similar manner as “squeaky10”:

(12) hen3ry: “(--)

When I went to update that shot 10 years ago my doctor had a hard time getting it. Since there aren't enough companies making vaccines if one can't
make it another one is not always able to step in. Vaccines have contributed to our health over the years. If the pharmaceutical companies have done nothing else they have prevented the complications of measles, scarlet fever, mumps, polio, rubella, tetanus, diphtheria, pertussis, smallpox. The complications include blindness, meningitis, rheumatic fever, sterility, paralysis, and death. Before we vaccinated children against polio there were scares in the summer about it. Babies died from whooping cough (pertussis). Children could be crippled by scarlet fever's complications. Young boys might become sterile because of mumps. Vaccination ended these things. It gave all of us a better chance to live healthy lives, to grow up. “

(13) neal: “hen3ry - and just who did all the original research to develop all these vaccines years ago? Who funded it? Who funds these major research projects now?”

Pseudonym “hen3ry” is worried that there are not enough companies making vaccines. He lists some of the developments the pharmaceutical companies have done to improve the health of people. To strengthen his message he lists the diseases and the serious complications the vaccines have helped disappear. Using the medical terms for diseases and complications makes the comment even more believable. The longer the list, the stronger point he is making. He also uses examples of how children were affected by these diseases. Writing things like “babies died” or “children could be crippled” can create a strong unpleasant mental image and are a powerful way of showing how much good the vaccines have done. His comment is written as factual information. By writing these examples pseudonym “hen3ry” has probably tried to affect the opinions of vaccine sceptics. He also uses the pronoun “us” to emphasize that the good vaccines have affected all of us. “hen3ry” ends his comment with a rhetorical question, asking is it not better to have vaccines than the diseases he mentioned earlier. It would seem that anyone who has read even little about vaccines would know how much they have done and how diseases have practically disappeared because of vaccines. Although the comment of “hen3ry” has a strong positive view on vaccines, it seems strange that there would even be need for this type of argumentation.

In his replying comment pseudonym “neal” refrains from answering his own leading questions, but implies as “squeaky10” that pharmaceutical companies fund their own studies with the aim of publishing information benefitting their own cause. Pseudonym “neal” uses the adverb “just” as an intensifier, to further stress that it is the pharmaceutical companies who fund their own studies. He uses the time aspect, first saying “all these years ago”, referring to the past, and then “now” referring to the present. With his questions, pseudonym “neal” implies that the pharmaceutical
companies have been doing this for many years. In this comment “neal” dismisses all the issues pseudonym “hen3ry” raised in his comment by asking three questions. As to the argumentation “hen3ry” made in the earlier comment about diseases and their symptoms, there truly is need for it if the counterpart can overrule facts with only three questions.

Pseudonym “jen” answers to an earlier comment about DES and its effect on people and babies. She claims a person should not blindly trust officials. She gets an answer from pseudonym “SD”.

(14) jen: “The point I was making about the DES is not that it is the same as this vaccine but rather that you can never fully trust what makers of a drug or the government says about something we are putting into our bodies.”

(15) SD: “(--)--parents have to make the best decision they can based on the available evidence. At the moment, the best medical evidence suggests the benefits far outweigh any risks. There are serious risks involved in not giving the vaccine. (Cervical cancer, even if caught early, is horrible and expensive to treat). If someone is that cynical about doctors, the healthcare industry, etc., why even take a kid to a pediatrician?”

Pseudonym “jen” implies we are all victims of a big medical trial. She even uses the adverb “never” to stress that in no circumstances should a person trust the word of government or drug makers, when they promise something is not harmful. The DES hormone treatment is used as an example of the mistakes that the drug makers and the government does. If this mistake happened, there will be others. Pseudonym “jen” uses the pronoun “we” and “our” to include everyone in her statement.

Pseudonym “SD” answers to “jen” that parents make the decision in their best knowledge. He implies that anyone reading the medical evidence sees that it is better to take the vaccine than not to take it. He refers to cervical cancer with the adjective “horrible” and also on monetary issues, saying that it is “expensive to treat”. He finishes his comment questioning why “jen” even goes to a paediatrician if she is that cynical about doctors. It seems that pseudonym “SD” tries to appeal to the parent in “jen” with his answer. He indirectly criticizes her parenting and decision-making skills. After “SD” has replied to “jen”, she continues:

(16) jen: “SD, Questioning new drugs hardly makes me cynical about the entire system. I do trust doctors but am cautious when it comes to pharmaceutical companies. [--]”
In her comment, pseudonym “jen” clarifies her earlier comment. She uses the adjective “cautious” to refer to her feelings towards pharmaceutical companies. Interestingly enough, she does not see that doctors could have any secret agendas or connections with the pharmaceutical companies. She also denies being cynical about the entire health care system as she does trust doctors. It is clearly important to her to show she is not an extremist in opposing health officials. She probably does not want to be seen as against vaccines because they are mostly attacked and judged in these comments. It is clear that one cannot be doubtful or say negative or sceptical opinions about vaccines without being corrected or judged, however, some of the sceptical comments do get similarly-minded answers.

In the following comment written by “Becky” she sees the connection between doctors and pharmaceutical companies. She gets an answer from pseudonym “ACW” who sharply gives his opinion on the matter:

(17) Becky: “[--] --If this is truly as effective as the "results" have shown in the limited time that it's been made available - remember how long it took past vaccinations to be labeled as doing more harm than good - then make it available for free to all. Has anyone seen how much Doctors are charging insurance companies for these mandatory shots? Take a look at your EOB and then tell me if this is a billion dollar revenue stream for Big Pharma.

http://cervical-cancer.emedtv.com/gardasil/generic-gardasil.html"

(18) ACW: “If you think the shots are expensive, try cancer. Now, there is the gift that keeps on giving. For that matter, try polio. That's a lot more expensive than vaccinations. I swim with some people who were at the tail end of the epidemic, just before the polio vaccines came in. They could explain their childhoods to you. They were the reason my parents couldn't swim in a public pool without fear. The vaccine is the reason I can. Disease, it seems, is like war. When a generation passes that hasn't experienced it, they have no memory of what it was like, and lose their fear, cracking open the door for the scourge to come in again. And indeed, it is creeping in - whooping cough has made a comeback as herd immunity is lost. It is entirely possible they make money off a vaccine and it *is* necessary. The two are not mutually exclusive.”
First “Becky” shows her suspicion about the outcome of the medical studies by using apostrophes around the word “results” and also suggests that because the vaccine has not been available for long, it seems improbable that it would already be as effective as the article states. She then shows her distrust to doctors and points out how much the shots cost. “Becky” uses the word “mandatory”. With the use of the word she points out how easy it is for pharmaceutical companies to make money; just make vaccines mandatory for all. She uses the nickname of the pharmaceutical industry “Big Pharma”. The term is often used by the critics of the industry and it has a negative tone. Lastly she provides to links to support her case. The first link provides information about the generic HPV vaccine. The second link is a video that has very disturbing information about the side-effects of the HPV vaccine, including personal stories. Personal stories are always a very efficient way to effect in decision making. People identify and feel sympathetically about the experiences of others. It is easy to see why there is distrust in all officials, including doctors, pharmaceutical companies and the government, when there is much similar information on the Internet, as the links provided by “Becky”.

Pseudonym “ACW” starts by strongly stating that “Becky” should try treating cancer which is more expensive than getting the vaccine. He uses the catchphrase “gift that keeps on giving” to sarcastically refer to cervical cancer. He then goes on to mentioning polio as well. He mentions his personal experience with people who were infected with polio before the vaccine came. Pseudonym “ACW” compares disease to war; when people have not experienced it, they do not know how it is. This is a powerful comparison. With his examples and comparisons, “ACW” makes the comment and doubts of pseudonym “Becky” sound ridiculous.

Pseudonyms “Patricia Taylor” and “Dennis” questions the content of the article and refer to the earlier news coming from Japan:

(19) Patricia Taylor: “[––]The Japan Times reported on June 15 that the Japanese government was suspending its recommendation that girls between the ages of 12 and 16 be vaccinated with these vaccines (Cervarix and Gardasil) until further information can be gathered and analyzed regarding adverse reactions. No mention of this, however, in this positive article on the vaccines.
Pseudonym “Patricia Taylor” gives a short conclusion of the article in The Japan Times. She then questions the trustworthiness of the article by pointing out that there is no mention of this in the article. Pseudonym Dennis answers to an earlier comment from a concerned parent whose paediatrician would not vaccinate her children:

(20) Dennis: “Maybe your pediatrician has a rightful concern. After all, Japan announced on June 14th that its health ministry recommendation for the HPV vaccine is being withdrawn citing side effects such as long-term pain, numbness and even paralysis.”

Pseudonym “Dennis” uses the adverb “maybe”. He does not want to imply straightforward that the paediatrician mentioned in the earlier comment is right or wrong. He explains his statement in the following sentence. Japan is smart enough to withdraw the vaccine recommendations and we should be as well. He concludes his comment by mentioning the side-effects reported by the users in Japan. The situation in Japan is mentioned several times in the comments. It is interesting how the commenters are ready to trust the decision of the Japanese government because their decision to vaccinate girls was withdrawn. However the recommendations of the United States government are seen as untrustworthy.

The comments of “Patricia Taylor” and “Dennis have not replies that would answer their why Japan withdrawn the recommendation of the vaccine. In most of the data used in the thesis, every doubt or concern is answered. Probably there was not enough information on the matter at the time. However, in other context pseudonym “TimSarr” explained it shortly:

(21) TimSarr: ”So far, an estimated 3.28 million people have received the vaccination in Japan alone. However, 1,968 cases of possible side effects, including body pain, have been reported.” 0.06%

The source of the information is not known, but he has done a calculation concluding that 0,06 percent of all vaccinated with HPV virus have gotten side-effects from it. The number is small. However, many think that even one child suffering from vaccine induced side-effects is enough and that is why the vaccine is not safe. The comment seems almost like a statement. It only has a reference and the percentage without any other explanation. The reader can do the rest of the math.
Pseudonym “dd” gives his insight on the vaccination discussion:

(22) dd: “I’ve had debates with doctors and researchers over vaccinations. The main message is, vaccines saved us, you’re a fool if you think the harm they may cause outweighs the benefits. This is the mindset deeply, deeply ingrained, and it brushes off any evidence to the contrary as the rantings of the uneducated or misinformed. If you think vaccines do not cause autism, then read Mary Holland's 2011 research: http://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1681&... or look into the Homefirst Health Services outside of Chicago, which does not use vaccines and which has "virtually no" autism in the 40,000 or so pediatric patients it has seen: http://www.wiscnews.com/wisconsindellsevents/news/local/article_0026dc44. [--] -- In any case get off the mainstream CDC and AMA websites and dare to look into "alternative" websites. You may find that the "dark side" actually has at least a little light in it.

Pseudonym “dd” first announces he has had debates with doctors and researchers. He wants to show that he has the information to debate and he has done it with the people who should know the most about vaccines. The debates are concluded in one sentence which condescend the ones who question vaccine safety. He claims that the people who show evidence against vaccine safety are called “uneducated” and “misinformed”. Pseudonym “dd” states that there is no room for questioning the vaccines without being grouped into “them who are wrong”. The writer gives additional information to prove that vaccines can be dangerous. In the end of the comment he uses the imperative “get off” to encourage people to look at other than official health information pages. He uses the apostrophes around “alternative”. Pseudonym “dd” might be signalling that the alternative websites should be considered more as official. He then writes, that “the "dark side" actually has at least a little light in it”. He uses the idiom “at least” to point out that as the alternative websites offer some hope, the official websites offer inaccurate information. He uses the term “dark side”, probably referring to the dark side as seen in “Star Wars”, in apostrophes as a metaphor for the alternative websites. Alternative websites are the “dark side” to some, but the use of apostrophes might signal that he is using the term sarcastically to imply that it actually is not the “dark side” at all.

Pseudonym “Need More Data” comments on the content of the article. As his pseudonym implies, he is not certain if it is providing enough information:
(23) Need More Data: “There needs to be more data to back up these statistics. For example, this article says, "8,000 girls and women ages 14 to 59 and collected vaginal swabs that were evaluated by the C.D.C."[--] --what if sexual activity declined in this group of girls and women because they knew they were part of this study? Where are those statistics? This statement: "Yet even with relatively low vaccination rates in the United States, infection with the viral strains that cause cancer dropped to 3.6 percent among girls ages 14 to 19 in 2010, from 7.2 percent in 2006, the officials said." --Again, I question sexual activity among this age group of girls. Has sex education by parents and in school districts led to a decline in overall sexual activity, which would result in a decline in infection? Not sure I'm buying into these studies as they are presented here. There are other factors that could have led to this decline and it's not mentioned in this article.”

Pseudonym “Need More Data” asks questions about the article content. He gives additional reasons to why the HPV rates have dropped, asking if it actually is decline in sexual activity that has caused the drop, not the vaccine. At the end he writes that the article leaves out certain factors concerning the issue. Pseudonym “Susan Amis” writes about the withdrawal of HPV vaccine recommendations in Japan, and lastly asks:

(24) Susan Amis: "[--] --Hey New York Times, how about telling both sides of the story?"

She states that The New York Times has intentionally left some important information out of the article. This can make the reader sceptical or interested in finding additional information. If The New York Times actually answered comments concerning the article content, it could bring different aspects to the conversation as well as strengthen the interaction between the commenters and the publication.

Pseudonym “Deep South” criticizes the people against vaccines. He categorises the opponents into three groups:

(25) Deep South: “Despite this clearly very positive news, the anti-vaccine lobby, the no-sex-religious lobby, and the tin-hats-in the basement lobby will find some way to spin it to make political hay for the irrational stance. Here you have a well tested vaccine that is clearly being effective. This is a shining example of something that works as designed. Oh, how I wish there were more rational people in the world...”
The commenter categorises the people who are against vaccines into three different questionable groups: the anti-vaccine lobby, the no-sex-religious lobby and the tin-hats-in-the-basement lobby. Although the group names might be politically incorrect the commenter is on point in that it is the anti-vaccinationists, the religious people and the ones believing in someone hiding the negative information on vaccines that comment sceptically or negatively on this piece of news. He claims that it is these people who spin the information and make it sound unreliable. He describes the vaccine with adjectives “well-tested” and “effective”. He ends his comment with a personal opinion “Oh, how I wish there were more rational people in the world…” Although this probably is written partly ironically, the commenter uses the pronoun “I” to refer to himself and “more rational people” to refer to others. This also implies that he is one of the rational people and the three groups mentioned earlier are not. The comment is an aggravation of the content many of the vaccine supporting comments have.

Societal discourse can be defined in several ways. In this thesis the topics belonging to this discourse were chosen keeping in mind that if these mind-sets were adopted by the majority of the society, it could have an enormous effect on the way the society works. Distrust in medical research, doctors, pharmaceutical companies, government and other officials were apparent in the discourse. Then again, the vaccine supporters do rely on health officials and official information. They also provide additional information to those who have doubts. Trusting unofficial websites and unscientific information and doing own research on the Internet concerning health issues is prevalent among the commenters who have sceptical attitudes towards vaccination. The power relations between the commenters are also visible in the discussion between the commenters. Both, the ones opposed and the supporters of the vaccine want to be right and want the other party to see their point of view.

6.2.3 Medical discourse

In medical discourse, the commenters use medical lexicon and somehow show their medical knowledge. They use medical talk to justify their opinions. The Internet is and endless source of medical information. As Fox (2011) found in her study, people get more and more information about health from the Internet and 59 percent of American adults use the Internet to search information for their health issues, although majority still turns to health professionals. 25 percent
have read the commentary or experience of someone else concerning health or medical issues on an online news group, website or blog. (Fox, 2011, p. 2)

Both those supporting and opposing vaccines easily find information to support their opinions. However, the quality of information is more difficult to evaluate. In many of the comments the vaccine sceptics talked about the ingredients of the HPV vaccine, how they affect people and about the risks of HPV. The Internet helps lay people to find and interpret medical information, however, in the case of vaccines, it is not easy for a lay person to understand why for example a certain ingredient is included in a vaccine and this might lead to questions and uncertainty. According to for example Kata (2012, p. 3779) the anti-vaccination activists claim vaccines include toxic ingredients and have side-effects. The health problems that have come after vaccination cannot be coincidence, but they are a straight result from vaccination. (Kata, 2012, p. 3779) It is easy to find a fault in the information provided by health officials, if one believes everything found on the Internet. People might also take information they have heard as the truth and are not interested in finding the facts. In addition, it is hard to convince people with a certain view to think otherwise. This applies for both, people with supporting and opposing views. Scientific information or official sources might not make a difference. People are quick to make assumptions and nowadays, with the help of the Internet, everyone becomes a medical expert. If distrust in medical officials becomes popular and people diagnose themselves, it could have an effect on the whole society. In the comments I have analysed in this section, medical discourse is used to make the commenter sound believable and engaged in the matter. It makes comments more convincing.

In her comment, pseudonym “Maria” writes about the vaccine, gives statistics concerning cervical cancer and giving the HPV vaccine to men. In her comment, pseudonym “Jennifer” replies to the comment from “Maria” about vaccinating babies. She lists vaccine ingredients and asks why babies are vaccinated against hepatitis B:

(26) Maria: “We give children the Hepatitis B vaccine when they are young, to protect them against a virus that is transmitted by sex IV drug abuse, but nobody objects on the grounds that their babies "are not having sex yet". Cervical cancer is nearly 100% preventable with regular Pap smears and appropriate follow-up, but the HPV vaccine prevents more than cancer. It keeps many young women from having to go through colposcopy and biopsy. I did 3 of those procedures this morning, charged $1,200 for each one, and sent pathology specimens that will run $600 apiece. The vaccine that
covers 4 strains (Gardasil) also prevents venereal warts. They don't kill anybody, but they are uncomfortable and humiliating, and the treatments (burn with acid, burn with electricity, freeze, slather with toxic chemicals) haven't improved much since medieval times. One other point: for men, there are almost no signs of infection with human papillomavirus infection, short of invasive cancer of the head and neck or anal cancer. I had both my sons vaccinated, not because I was worried about them getting cancer, but because I did not want them to give cervical cancer to my future daughters-in-law, and live with the guilt that would bring.”

(27) Jennifer: “Funny you start your comment endorsing the administration of the Hep B vax at Birth. Giving that vax to newborns without Hep B in the family is absurd. And LOTS of people object on the grounds that their babies are not having sex yet. Smart people ask this question: Why inject a newborn with 250 micrograms of aluminum. A known neurotoxin, to protect against a sexually transmitted disease especially when we know the duration of the supposed immunity conferred by the shot is so short lived it will wear off by the time they are 12? IF you are that cavalier about a newborns brain development you might as well pour vodka down its throat. Likewise, with Gardasil there are reasons not to get it. [--]“

Pseudonym “Maria” uses the pronoun “we” to refer to parents, as she herself is a parent. She could also refer to her profession, as she later in the comment uses “I did” which probably refers to her being a doctor, making the comment more reliable. She compares the HPV and Hepatitis B vaccines to show that it is important to give them to babies or children, because it prevents diseases in the future. Pseudonym “Maria” uses the pronoun and verb “nobody objects” to include every parent in her statement. She then gives statistics concerning cervical cancer, although she does not list any source for the statistics. Her information makes her personal assertion sound more convincing.

Pseudonym “Maria” continues with a personal story that shows how expensive the medical treatment is. She then lists uncomfortable sounding ways to treat venereal warts. “Maria” uses a time aspect mentioning “medieval times” when she talks about the removing of venereal warts. To a reader the medical treatment of medieval times probably does not sound appealing. These are all ways to convince the reader of the importance of HPV vaccine. She uses medical terms such as “colposcopy” and “slather with toxic” to show her experience and knowledge. She emphasizes the importance of the vaccine to men. In the end she uses the pronoun “I” to stress that she has done what is important. She also shows her foresight by worrying about her future daughters-in-law. She could not live with the guilt of her sons transmitting HPV to anyone. These sentences show that in
her opinion, this is what a good parent is. It seems that she is trying to make the parents who have not vaccinated their children and especially their sons to feel guilty, in order to make them get the vaccination for their sons.

Pseudonym “Jennifer” starts by using the adjective “absurd” as she writes about giving hepatitis B vaccine to babies. The adjective “absurd” is chosen to represent her view of the extremely unreasonable practice of vaccinating babies with hepatitis B. Pseudonym “Jennifer” uses capital letters in “LOTS”, emphasising the amount of people who do not give vaccines to babies. She also uses them in conjunction “IF” to emphasise that truly pseudonym “Maria” cannot be that ignorant when it comes to the health of a baby. “Jennifer” lists reasons not to vaccinate a baby. She uses the term “smart people” to refer to people like herself, who question and doubt the vaccines. This means the other group is the “stupid people” who only do what they are told. Writing like this creates oppositional roles between the people who have different opinions about the matter and representing her view as the right one. “Jennifer” states that the hepatitis B vaccine has aluminium in it, which is a neurotoxin. There is no citing in this information; however, “Jennifer” must have done some research to find out this information. Lastly she uses a metaphor, that vaccinating is as dangerous as force-feeding a baby with alcohol. By it she tries to show how stupid and ignorant the other commenter is if he vaccinates a baby. The metaphor is strong; the image of pouring vodka to a mouth of a baby is disturbing.

“Jennifer” has written another comment, where she gives medical information about how pap smears are as effective as the vaccine:

(28) Jennifer: “Evidence shows that pap smears are equally as effective. Evidence shows that components of this product are proven neurotoxic. As a good parent, I do my homework. I dont agree to inject poison into my kid unless absolutely necessary.”

She uses the phrase “Evidence shows” but she gives no citations to what evidence she is referring to. “Jennifer” states that pap smears are “equally as effective” as the HPV vaccination. In her comment, she also claims that “components” of the HPV vaccine are “proven neurotoxic”. She refrains from naming the components, only uses the word in a general level. “Jennifer” also leaves out the studies that show the proven neurotoxic components. This type of argumentation weakens
the credibility of the comment. The phrases used could also be seen as giving medical advice about pap smears and about the components of the HPV vaccine to others. She then again strengthens the oppositional roles between the good and the bad parent by stating that good parents find the information why not vaccinate. She uses the word “poison” as a synonym to the vaccine or the ingredients of the vaccine to emphasise how bad vaccinating is.

Pseudonym “squeaky10” uses the medical talk about the immune system as well. He has found information about the immune system and how it works, and that vaccinating might hurt the system. The question that remains is how much normal people actually understand about the human immune system.

(29) squeaky10 “Children in New York are supposed to receive over 30 shots by the time they are two. That's if they follow the yellow card pattern. That's a huge assault on an not fully mature immune system. One of the factors that stop parents from giving the vaccine to their children is the worry over the immune system.”

Pseudonym “squeaky10” is worried about the amount of vaccines given to children. He uses the term “huge assault” to refer to how this harms them. The noun “assault” refers to violence and that is probably what “squeaky10” wants to point out. Giving children vaccines is the same as violating them. He then defends parents; the worry over the immune system of their children stops parents from vaccinating. This he states as a fact using the simple present tense.

Pseudonym “amy” talks about the side-effect of the vaccines:

(30) amy: “I consider myself educated and not wilfully ignorant. I have seen first hand children who have vaccine-induced autism. Please educate yourselves before you vaccinate. p.s. I am married to a research scientist who is not paid any extra money and who now questions vaccines after researching the topic himself.”

In the first sentence she replies to a comment which stated that people who are against vaccines are wilfully ignorant. She states that she is educated, with which she wants to prove that what she says and believes is not nonsense. It also suggests that she has educated herself about vaccines. At the end of the comment she further tries to strengthen her position as trustworthy, by writing that she is
married to research scientist who is not bribed by anyone and still has doubts about vaccines. If an expert is uncertain about vaccines then everyone else should be as well. Pseudonym “amy” uses the sentence modifier and imperative “please educate” to plead to or demand other parents, who actually are the wilfully ignorant. She further writes about her own experience that she has seen children with vaccine induced autism. Here she talks about the side-effect of vaccines. The statement that vaccines can cause autism has been overturned by scientific research but on the Internet there still are multiple sites which strengthen this accusation. Pseudonym “amy” does not tell where she has seen these children. The usage of the plural “children” implies to more than one child, which, according to the oppositional evidence, is untrue. However, this type of commenting can negatively affect the vaccination decisions of some parents.

Pseudonym “Romaine Johnson” tells her side of the story. She writes as a medical expert. The answer she gets is from a medical student. Pseudonym “Jenn” confirms her statements.

(31) Romaine Johnson: “One of the more devastating diseases that I treat is recurrent respiratory papillomatosis (RRP). It is a disease caused by HPV that affects many children. There is no cure and due to the nature of the disease these patients often require repeated surgery to remove the papillomas from the larynx and trachea. There is great hope that this vaccine, by reducing the prevalence of cervical HPV, will in turn reduce in the incidence and prevalence of RRP in children. And that would be huge.”

(32) Jenn: “Thanks Dr Johnson. I am a third-year medical student in DC and President and Director of the RRP Foundation. Our community knows all too well the devastating effects of RRP, which include laryngeal and tracheal disease as you mentioned - but also bronchopulmonary disease and the risk of malignant transformation. We echo your hope that the HPV vaccine will eradicate new cases of RRP and the tremendous burden of this disease. www.rrpf.org”

Pseudonym “Romaine Johnson” starts her comment with “I treat” to show that she is a medical expert and has treated a disease named “recurrent respiratory papillomatosis” (RRP). The adjective “devastating” is used to stress the seriousness of the disease. The disease name is medical lexicon. She continues to tell how this disease affects children and how it is treated. Involving children and their suffering always appeals to emotions, especially the emotions of parents. Stating that there is “no cure” for the disease emphasises the severity of the disease and strengthens the position of the HPV vaccine as beneficial. Pseudonym “Romaine Johnson” finishes by saying that HPV vaccine
could reduce the RRP in children. She makes an impressive case with a personal story and appearing as a medical expert makes her more believable.

Pseudonym “Jenn” has replied to “Romaine Johnson”. She starts by telling that she is a medical student and President and Director of RRP Foundation, which makes her comment sound more believable. Pseudonym “Jenn” uses medical lexicon to list the effects of RRP and expresses her hope that HPV vaccine will reduce RRP. She ends her comment by providing a link to the homepage of RRP foundation, which for example offers information about the disease. These two comments are written to appeal to parents that HPV vaccine is useful and can help their children stay healthy. The use of medical lexicon and declaring that the writers are medical experts is done to make their comments sound more appealing.

In some of the comments people argue that only a minority of the HPV viruses will go on to develop cervical cancer. Pseudonym “aliciavinc” writes:

(33) aliciavinc: “I am not anti-vaccine at all when it's a serious disease that's worth the risk of adverse vaccine effects, but this one has got to be the most useless vaccine ever (and has one of the highest rates of negative side effects)[--] --According to the CDC, the human papilloma virus (HPV), or genital warts, is the most common sexually transmitted disease in America. More than 6 million women contract it annually, yet cervical cancer claims less than 3,900 women – most of which are due to not getting regular Pap smears. In the U.K., cervical cancer claims a mere 400 lives per year. Why is your risk of dying from cervical cancer so low? Because your immune system is usually strong enough to clear up this kind of infection on its own, and does so in more than 90 percent of all cases. The CDC even admits to this fact on their website. And, as long as you’re getting regular PAP smears, cervical cancer can be caught in its early, and easily treatable, stages. Vaccinated or not, regular PAP smears are indispensable.”

In the beginning of the comment pseudonym “aliciavinc” sees it is important to separate herself from the anti-vaccine group. She probably considers this remark to make her more believable as well as draws away the negative attitudes the majority of the commenters have towards the anti-vaccination group. She then adds that she approves vaccines when it comes to “serious” disease. The usage of the adjective “serious” states her opinion that HPV is not serious enough to get a vaccination. She then mentions the side-effects, which are mentioned in several comments. She
negatively correlates the vaccine uselessness and the highest rate of side-effects compared to other vaccines. Although according to the CDC (2015, Human Papillomavirus (HPV) Vaccine Safety) the side-effects are mild, such as pain, redness or swelling in the arm where the HPV shot was given, are the side-effects often used as a justification for not getting the vaccine.

Pseudonym “aliciavinc” asks a closed question “Why is your risk of dying from cervical cancer so low?” and gives herself the possibility to answer the question which she has framed and therefore the answer is presupposed as true. Pseudonym “aliciavinc” refers to information and statistics from the website of CDC to prove her point. She says that “The CDC even admits this fact”. The use of the adverb “even” and the verb “admit” is interesting. It seems that the commenter doubts that CDC would tell accurate information about the HPV vaccination. She could mean that to her it is strange that even if CDC recommends the vaccine, they can still admit that HPV can in some cases clear on its own. Vaccination is not seen as a precaution. In the end she gives her own health advice, encouraging women to go to regular pap smears.

Pseudonym “SW” has concerns about the long-term effects of the vaccine:

(34) SW: “[--] --Moreover, we have no idea of what it will do in the long run to these girls' reproductive systems. I am very much in favor of safe vaccines, but testing the world's first cancer vaccine on young girls was a questionable decision.

The lack of knowledge concerning the future is used by the commenters to explain their wariness. Pseudonym “SW” includes everyone to the group of uncertain by using the pronoun “we”. He also uses the negation in “no idea” to stress the uncertainty, although for example the Centers of Disease Control and Prevention (2015, Frequently Asked Questions about HPV Vaccine Safety) reassures that the vaccine is safe. The uncertainty is one of the reasons the commenters are advising parents to develop personal expertise and take responsibility for health and healthcare decision-making. Without actually stating why, “SW” is worried how the vaccine will affect the reproductive systems of girls. He also uses the uncertainty factor to question the vaccine.

The effectiveness and the usefulness of the vaccine raise questions. The developers of the HPV vaccines have admitted that the vaccines do not protect against all types of cancers the HP viruses
can cause but it protects against the most common ones. It is clear that not all of the commenters are aware of this fact. The lack of effectiveness is also justified by the fact that the efficacy period of the vaccine is 3-5 years and the children receiving the vaccine should have booster shots approximately every four years.

Many parents are afraid of the side-effects the vaccines may cause. The possible side-effects and problems the vaccine is claimed to have caused to its takers have been widely reported in the media. In the comments of the New York Times article the toxic ingredients of vaccines, such as aluminium, are mentioned. In several comments there is only a mention of dangerous side-effects without any specification. The commenters have difficulties in trusting the scientific research published concerning HPV vaccines. The one thing that often comes up is where the research funds come from. Another factor is that they doubt whether the researches have test group that is sexually active or in the risk group of getting HPV. Several commenters mention the fact that there is not enough proof that the vaccine actually works. Also there has not been enough research done on the safety concerning the vaccine. Others mention that they do not believe in a vaccine that has only been in production for two years.

6.2.4 Summary of discourse features

There were three main discourses I found in the comments of the Nytimes.com article “HPV Vaccine Is Credited in Fall of Teenagers’ Infection Rate”. The comments mostly discussed human papilloma virus vaccination. The commenters had strong, at times even aggressive opinions about the HPV vaccine. The first discourse I presented was the ideal parent, in which the discourse is activated through the commenters justifying their parental decisions. In societal discourse I included the comments that covered commenting the news article, pharmaceutical companies and the societal importance of vaccination. In medical discourse the discourse was activated in the use of medical lexicon and assumed medical knowledge to prove the knowledge of the commenters over the discussed matter. As mentioned earlier, the discourses overlapped in the comments. My decision was however to represent a comment and its reply next to one another to better describe the dialogue the commenters have with one another. I will next discuss some of the common features found in the comments.
The pronoun "I" is used often to stress personal opinion and personal decision making skills. The pronoun "I" also comes across in personal stories, which are used in the comments several times. It is an easy and effective way to influence people, because it is easy to feel sympathetic towards the experiences of others. The pronoun "we" is often used to refer to parents. It is also used to reflect the whole society. The power relations between the commenters are seen in the way they call themselves with names and exclude or include different groups by using pronouns such as "us" or "them". The commenters also exclude themselves at times from a certain group, for example by stating that they are not anti-vaccination. Fairclough (1992, p. 149) notes that for example exclusion can be socially significant in texts. He mentions that for example “we” is important in terms of identificational meanings.

Fairclough (2010) argues that CDA investigates how discursive practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power. The opacity of these relationships between discourse and society is a factor securing power and hegemony. With opacity Fairclough means that linkages between discourse, ideology and power may be unclear to those involved. (Fairclough, 2010, p. 93) In these comments, the power relations between the commenters come across in the number of negative or sceptic comments compared to the positive and supporting comments. The supporters are a clear majority in these comments. It seems that the supporters also use better argumentation tactics against the negative commenters; they for example provide links to additional information and give information about the disease based on facts. However, the positive commenters more often use offensive language, such as name-calling. Negative commenters often use information that has no citations or scientific proof. The comments of supporters also included clear citations of other texts or statistics stated as facts, often lacking citation. Statistics strengthen the reliability of a comment but on the other hand not stating where the citations are taken from weakens the credibility. The citations often include medical lexicon. The stating of medical expertise is used to convince the other readers of knowledge concerning the topic. Excluding from the group, belittling, sarcasm, additional information and asking questions are in these comments ways to question the comments of others.
The shifting of power from officials to individuals is realised in the distrust of professional health officials and pharmaceutical companies and rather trusting other sources. Wider distrust in both, health officials and pharmaceutical companies can have an effect on the whole society. If people refuse to vaccinate or find alternative methods for healthcare, diseases that have virtually disappeared could emerge again. These topics were also apparent in the research of Kata (2012). On the other hand, this could lessen the medicalization of the population. Conrad (2007, p. 4) explains that medicine and medical concepts have grown their impact from past to present meaning that normal parts of human life become medical conditions. He calls it medicalization.

The empowerment the people experience comes through in these comments in the voices which encourage parents to do research concerning the HPV vaccine and then deciding what is best for their child and trusting own decision making skills. The responsibility of a parent is called for. In many of the comments, the child is a passive agent, who without any power to decide waits for the parent to make the vaccination decision.

The social pressure to get children vaccinated is evident in the comments. Pressuring parents to make the "right" decision might have an opposite outcome. Offering both sides the information they need from the correct sources might help broadening their views. Sexual behaviour and abstinence are seen as ways to prevent HPV from spreading. Abstinence is seen as something morally good and sexual behaviour or even promiscuity as something bad or unwanted. These comments are often ridiculed, as are the often religious beliefs behind the comments. As HPV is tied to sexual behaviour, it should be noted by both parties that it does spread in the same way as for example the influenza or other diseases people often are vaccinated against, such as polio. However, as the side-effects of the HPV vaccine are proven to be relatively mild, it causes astonishment in parents that vaccinate that someone would deliberately leave their child unvaccinated.

6.3 Building community

The commenters of this article can roughly be divided in two groups; those who support the vaccine and those who do not. The groups question the comments of each other. Especially after this, the
groups defend commenters with similar viewpoints. This strengthens the feeling of community. The
commenters often used the pronoun “we” and the objective form “us” to include others who had
similar views on vaccination. The other side to this is “they”; people with opposing views and
wrong values. This distinction reinforces the cohesion in each group. According to Tenenboim and
Cohen (2013, p. 2) user comments have a role in constructing social and group identity, as social
topics and controversies are prominent among highly commented upon news items. The piece of
news in the NYTimes.com is a social topic as well as medical and is highly commented.

It is repeated several times in the comments, how parents make vaccination decisions in the best
interest of their children. Sharing the same values creates a sense of community. Encouraging others
to vaccinate or not vaccinate their children is not only present in the case of HPV vaccination but
other vaccines as well. Community protection and herd immunity are for example the result of
vaccination as protecting children from side-effects and unnecessary vaccines is the result of not
vaccinating.

Posting of like-minded comments might also build a sense of community online. Some of the
commenters posted more than once, thus it can be assumed that they felt greater need to express
their opinion. Do they also feel a greater sense of community compared to the ones who only write
one comment and do not get an answer? Some comments were more aggravated than others.
Usually those comments got more reactions. The ones holding oppositional views compared to the
majority of the community may strengthen the feeling of the majority of being right. In this case the
opposing views were silenced with either additional information or vitriolic writing. In any case,
with commenting people want at least some attention, they want to be heard and they possibly want
to affect the opinions of others. People commenting to the content of the article might also want to
communicate with the writer of the article or call attention to the NYTimes.com employees. However, the comments were left only by readers, thus it is uncertain whether the staff reacts to
comments.

In the case of commenting, people form a community for a definite period of time. In this case the
commenting section is already closed, so interaction on the commenting space can no longer take
place. However, people can still read the comments and find assurance for their decisions. Commenters who comment more than once are taking place more actively than those who comment only once or only read the comments. The same pseudonyms may comment on other news articles as well and frequent commenters might know each other by pseudonym.
7 CONCLUSION

My aim was to highlight some of the most common discourses around vaccination discussion. I analysed the online comment section of one article in the NYTimes.com which is the online version of the New York Times. I singled out the comments which were typical or expressive concerning the discussed discourse. I also wanted to represent the relations between commenters; how they write to each other, justify their views, or dismiss or approve and strengthen the views of others. I found three main discourses: The ideal parent, societal discourse and medical discourse. The discourses overlapped in many of the comments and other, not as visible discourses could have been found as well. It is fast and effortless to write an opinion on an online article. Comments are not always thought through. Anonymity encourages people to write in a pungent manner which maybe would not be used when communicating face-to-face.

The topic is controversial as well as socially important; it has an effect on everyone. I chose HPV vaccination because it is one of the new vaccines although the discussion seems to be similar when compared with other vaccines. Understanding how vaccinations work is complex. Online communication and discussion of relatively complex things to common people can lead the commenters or the people who read the comments to adjust their opinion. If people feel unsure about something, they need other people who believe the same way. That is why I consider online commenters and the comment readers to be a certain kind of community. The comments are written to someone, an audience. The audience in the case of comments are the people reading the article, the comments, and the commenters themselves. Sometimes a comment is more aimed, for example when a commenter replies to a particular person. In any case, a person writing a comment writes to someone and wants his opinion to be heard. There is no recognisable relationship between commenters and their audience. However, even in this community, the ones who comment more than once with the same pseudonym can feel more familiar to the audience. The ones producing the comments mostly hide behind anonymity. The audience can still make presuppositions of the commenter by attaining clues or opinions from the comments.

Personal education in health issues is in these online comments linked to empowerment. A person can make his own decisions after researching the topics thoroughly. In the analysed comments it
was visible that a responsible parent does the research and is afterwards capable of deciding what is best for his child. The pronoun “we” is used in many of the comments. It is a euphemism to the whole society. It is mentioned in several comments that “we” do not yet know how much harm the vaccinations can cause in the future. The other side argues that “we” do more good than harm by vaccinating.

The main themes in the online comments of this article were consistent with earlier vaccination discussion (Lei et al. 2015; Feinberg et al. 2015), which suggest that online comments can provide a reliable source on attitudes and perceptions of health issues. The themes found in this paper were for example trust and distrust in pharmaceutical companies and health officials and vaccine safety and effectiveness. Researching online comments could help health officials provide the type of information the parents are looking for and try to undo the myths concerning vaccination.

This study is quite and only scratches the surface of researching online reader comments. This master’s thesis discusses only one article and only a fraction of the comments left were analysed. Using only this paper as a source for generalizations concerning vaccine issues is not recommendable. Although I used a variety of sources, it was difficult to find journals that concentrated on discourse and vaccination or health related issues. The discourses I found were the most striking to me. Other interesting discourses could have been found as well. Also the argumentation tactics of commenters could be analysed. In addition, pseudonyms could be a study topic. In the comments of this article there were interesting picks for pseudonym. It must also be noted that the comment spaces for newspaper articles can be a place for researchers to look for the opinions of lay people on certain matters. It would be interesting to see how the audience receives these comments and if the comments have an effect on the way they perceive the HPV vaccine.
REFERENCES


