MASTEROPPGAVE

Master i læring i komplekse systemer

Vår 2013

Verbal atferd og sosiale medier

Verbal behavior and social media

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HØGSKOLEN I OSLO
OG AKERSHUS

Acknowledgements

I would like to thank Asle Fagerstrøm for the supervision and guidance I have received during the work with the master thesis. Many thanks also go to family, friends and colleagues for encouragement and support.

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Abstract

Social interaction is important for human beings and has been subject for research in different forms. Due to technological developments the last decade, social media have occurred and show social interaction in new forms. With the background in social media and the key concept of interaction, these articles offer a behavior analytic view of understanding interaction in social media. The first article presents Web 2.0 and interaction viewed from traditional approach and functional approach. The article focuses on how concepts from behavior analysis can be used to understand interaction and examples are given throughout the article. In article two a field experiment is presented. The effect of advertisements made from a behavior analytic framework, on a social networking site is measured. The purpose is to observe the effect of advertisements within social media and to see whether there is a difference between the advertisements.

Keywords: social media, verbal behavior, interaction

Using behavior analysis to understand interaction in social media

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Abstract

Social media have occurred as a result of technological innovations and are used for education and information in different forms and not least, social media has become important channels for interaction between people and organizations. Different scientific traditions seek to understand how and why and the interaction in social media is working. Behavior analysis is a scientific approach to behavior that uses functional analysis to describe, predict and control behavior. Functional analysis has a goal to find the functional relationship between a target behavior, antecedents and consequences. This study seeks to demonstrate that behavior analysis can give important contributions to explain, predict and influence interaction in social media.

Keywords: social media, behavior analysis, interaction, web 2.0, verbal behavior

Social media have been described as “content that has been created by its audience” (Comm, 2010, p 2). A study by Fagerstrøm and Ghinea (2010) shows how companies can use social media to increase sales for their products. In 2007 the company SCA Libresse launched a new marketing campaign. Libresse created an online design competition to attract more users in their main target group, girls between 14 and 25 years. The competition was based on the idea to invite girls in the target group to design their own pair of underpants on the Libresse web site, and people could be invited to vote for their favorite design through Facebook, blogs and the Libresse web site. Over 90 000 pair of underpants were designed during the campaign period. Visitors to the web site increased with 74% and the average time spent on the web site showed an increase from 12 to 19 minutes. And sales were also increasing. Fagerstrøm and Ghinea (2010) conclude that this case demonstrates that companies can increase sales by using the Internet in an interactive and social way. This is only one example of how social media can be a powerful tool for organizations.

Web 2.0 and interaction

The innovation that made use of the technology beyond the static pages of early web is often referred to as web 2.0. Web 2.0 is seen in contrast to web 1.0. The shift from web 1.0 to web 2.0 is the result of technological development and a new way of using web sites and applications. An example of the development is the technology RSS that allows you to subscribe to a page and get noted each time the page changes (O´Reilly, 2007). Web 2.0 also refers to the changes in the way users use the Web. O’Reilly (2007) stated that a Web 2.0 web page or application automatically gets better the more people use it, network effects from user contributions are the key to market dominance in the Web 2.0 and users must be treated as co-developers. Birdsall (2007) calls Web 2.0 a social movement and Miller (2005) emphasizes that

Web 2.0 is about sharing code, content and ideas and Flew (2005) stated that with the development of Web 2.0 we moved to see web content as an ongoing and interactive process.

Web 2.0 allows users to contribute to the content in many ways. The internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content, are called social media (Kaplan & Haenlein, 2010). Bhanot (2012) agrees and defines that the use of Web 2.0 technologies to communicate and interact with users is called social media. Kaplan and Haenlein (2010) categorized social media into collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds.

Facebook is the largest social networking site in the world with over a billion monthly users by March 2013 (Facebook Newsrooms, 2013). As several researchers have pointed out above, social media is about sharing, influencing content and interaction between users. Examples of interaction in social media are the possibility to comment on others posts in Facebook, likes and shares.

Web 1.0 and Web 2.0 differs in many ways, but the level of interaction between users of the web page or application is probably the most obvious. Social media is not only a tool to use to interact for individuals. Social media provide a variety of ways for users to become involved with organizations (Waters, Burnett, Lamm & Lucas, 2009). The new direction for the web opens enormous new possibilities for business (O´Reilly & Battele, 2009). As Bhanot (2012) emphasizes, social media is much more than new and improved technology. Social media can therefore provide individuals and organizations with a tool to interact with stakeholders. The SCA Libresse campaign mentioned in the introduction of this paper demonstrates that social media can be used to enhance interaction and increase sales.

How to explain, predict and influence interaction?

Interaction is essential to explain behavior in social media. Wagner (1994) defined "interactions as reciprocal events that require at least two objects and two actions" (p.20). Interactions occur when these two objects and events mutually influence each other. Interaction with other people start when we are born and people are interacting with each other the whole life. Scientists have been working to understand the importance of interaction and what makes interaction occur in different situations. Skinner (1957) emphasized that people could develop language through social interaction, and established a link between stimuli, antecedents and consequences.

Interaction can be an instrument both for individuals and organizations. If you can explain, predict and influence interaction between people, you will have a great advantage compared to those who cannot.

Traditional approach to understand and explain interaction

Social interactions form the basis of social relations (Heatherton & Walcott, 2009). Within sociology, social interaction is explained as a dynamic and changing sequence of social actions between individuals or groups, and it is an exchange between two or more individuals (Browne, 2011). Symbolic interactionism is a branch within sociology. George Herbert Mead introduced the perspective of symbolic interactionism in the 1920s. Meads students wrote down his perspectives in the book in Mind, Self and Society (1934), after his death. Central in his theory is that the human being has a self, and that one's self develops through social interactions (Blumer, 1969). Symbolic interaction theory analyzes society by addressing the subjective meanings that people impose on objects, events, and behaviors (Anderson & Taylor, 2009). Symbolic interactionism is based on three principles. The first principle states that humans act

toward people and things relative to the meanings of the things have for them. Secondly, the meaning of these things arises out of the social interaction with people around, and finally the meanings are modified through interpretative processes (Blumer, 1969). The interaction and communication between people are dependent of how they interpret language and symbols (Goffman, 1959). Fernback (2007) conducted a study to investigate meanings people get from interaction in online groups, and where he found that interaction and the value of the community affect their meanings.

Sentiment analysis is another approach to understand interaction. Sentiment analysis is the computational study of opinions, sentiments and emotions expressed in text. Sentiment analysis aims to determine the attitude of a speaker or a writer (Liu, 2010), and it seeks to identify the viewpoints of a text span (Lee & Pang, 2004). It is a subjectivity analysis (Wiebe, 1994). Sentiment analysis has been widely used to explain interaction in social media and is categorizing text in subjectivity and polarity. This analysis assumes that personal moods can be divined from word selection (Zimmer, 2011). Godbole, Srinivasaiah and Skiena (2007) suggest a system that identifies positive and negative parts of text, and they have investigated which newspapers and blogs that were most positive and most negative in July 2006 using this system. They found that there are a difference between news and blogs, where blogs are using more positive words to characterize controversial politicians.

The two approaches offer a structural approach to explain behavior. By this means that behavior is analyzed in terms of its form and structure (Pierce & Cheney, 2008). Symbolic interactionism has been criticized for studying human behavior on a micro-level and it is difficult to use the theory to analyze changes in society (Kuhn, 1964). Sentiment analysis has been criticized for extracting the value of feeling (Hearn, 2010). Hearn (2010) describes people

working within the area of sentiment analysis as ”feeling-intermediaries”. Another opposition against sentiment analysis states that emotions are abstracted from individuals and it has a focus on monitoring (Andrejevic, 2011).

Behavior analysis – a functional analytic perspective

Behavior analysis is a scientific approach to behavior, and it seeks (Biglan & Hayes, 1996): "to develop an organized system of empirically-based verbal concepts and rules that enables behavioral events can be predicted and influenced with precision, range and depth" (p .50). Behavior itself is seen as the subject matter of interest, and behavior analytics seek to describe, predict and control behavior through functional analysis.

The goal of functional analysis is to find the functional relationship between a target behavior and its antecedents and consequences (Catania, 2013). A functional relationship describes the connections between behavior and its causes in the environment. The functional analysis focuses on the identification of variables that influence the occurrence of a behavior (Hanley, Iwata & McCord, 2003). By using functional analysis we can classify the behavior and the associated interaction between the users in social media. According to the behavioral response functions we can analyze the environment in terms of stimulus functions (Pierce & Cheney, 2008). This means we can establish a relationship between the environment and responses of users of social media. Functional analysis should therefore be a powerful tool to expand our understanding of interaction in social media. Thus, the research questions for this study is as follows:

- How can the concept of interaction in social media be explained from a behavior analytic view?

- How can we influence interaction in social media from a behavior analytic view?

Contribution to academia and practice

Behavior analysis may give a new and important contribution to the understanding of social media and how people interact. A functional approach gives observable and manipulable effects and can give a tool to individuals and organizations on how to work with social media to get interaction and with their users.

Structure of the paper

Central terms are defined to give an overview of the behavior analytical terms. Operant behavior, verbal behavior, rule-governed behavior is terms of behavior analysis and the connection with interaction in social media. These terms are defined and related to social media and interaction.

Functional approach to interaction

By using functional analysis we can classify the behavior and the associated interaction between the users in social media. According to the behavioral response functions we can analyze the environment in terms of stimulus functions (Pierce & Cheney, 2008). Operant conditioning is a process where behavior is strengthened by its consequences (Skinner, 1953). Operant conditioning is represented by a three-term contingency: A stimulus that follows a response (R) and thereby are increasing the probability of similar response, has a reinforcement function (S^R), the events that regularly precede an event and set the occasion for the behavior are called discriminative stimuli (S^D). Discriminative stimuli are defined as "stimulus in the presence of which a particular response will be reinforced" (Malott, 2007, p. 202), and are also called antecedents for behavior (Baldwin & Baldwin, 2000).

Motivating operations is another form of antecedent events, and are the behavior analytic way of explaining the concept motivation in human behavior (Laraway, Snycerski, Michael & Poling, 2003). Motivating operations refer to an event or stimulus condition that momentarily alters (a) the value of consequences that act as types of reinforcement or punishment, and (b) the probability of behaviors that have been previously associated with such consequences (Michael, 1982). Michael (1982) also explains a motivating operation as the change of how you desire something and how much you will do to achieve it. Motivating operations share two main properties; value-altering and behavior-altering effect (Laraway et. al, 2003). Laraway et.al (2003) refers to the value-altering effect as the effect an antecedent event has on the effectiveness of other stimuli that are functioning as reinforcement or punishment. Behavior is more or less likely to occur if the motivational operation establishes or abolishes the effectiveness of a reinforcer or a punisher (Dube, MacDonald, Mansfield, Holcomb & Ahearn, 2004). The behavior-altering effect considers an increase or decrease of responding as an effect of responses related to the consequences of previous behavior (Laraway et. al, 2003). The behavior-altering effect is often described regarding to changes in frequency of behavior (Langthorne & McGill, 2009).

Through a functional approach to interaction we can identify variables that control behavior and specify how they interact to determine a particular verbal response (Skinner, 1957).

Verbal behavior

Operant behavior refers to behavior that operates on the environment and that produces consequences that in turn strengthen the behavior. Verbal behavior is operant behavior. Skinner (1957) defined verbal behavior as behavior that is reinforced through the mediation of another

person's behavior. By this means that verbal behavior refers to all vocal, written and signed behavior where another person reinforces the particular behavior. Verbal behavior can be modified in a systematic way by administration of reinforcers (Salzinger, 2008). The contingencies regulating verbal behavior come from the practice in the verbal community (Pierce & Cheney, 2008) and have evolved over time (Skinner, 1953). Verbal behavior emphasizes the functional relationship between behavior and environment, and the behavior is dependent of the condition that leads to a request and the consequences the utterance produces (Bijou, 1993). Skinner (1957) distinguishes between the behavior of the speaker and the listener in the functional analysis. An example of functional analysis of verbal behavior in social media can be as follows: A person needs help to get the car fixed and wants recommendations of garages. The person posts on Facebook "Help me, I need to fix my car and do not know which garage to choose?". Another person responds to the post with: "My brother is great at fixing cars, he works at Car Care in the city". The verbal episode on Facebook contains of a speaker and a listener, and can be represented as the three-term contingency as follows:

Insert figure 1 about here

Verbal operants

Verbal operants help us to identify functional verbal repertoires and the process of learning them. The verbal operant mand involves that the form of the response is under the functional control of motivating operations (MOs) and specific reinforcement (Sundberg, 2007). The motivative variable can be deprivation or aversive stimulation (Michael 1993). Michael

(1993) differs between two kinds of effects of motivating operations: behavior-altering effects and value-altering effects. The behavior-altering effect means that it immediately evokes or suppresses behaviors that have resulted in the consequence linked to the behavior in the past while the value-altering effect means that it alters the value of a consequence of behavior by making it more or less reinforcing (Michael, 1982). A behavior is a mand if functional relations exist among the motivating operations, the response, and the specific reinforcement history (Sundberg, 2007). The mand is verbal behavior whose form is controlled by states of deprivation and aversion and it is said to specify "its own reinforcer" (Skinner, 1957). The function of a mand is to request or to obtain what is wanted. As of the definition of verbal behavior it includes vocal, written and signed language (Skinner, 1957) where the behavior is reinforced by another person. This definition includes the concept of interaction in social media to be defined as verbal behavior. For an organization actively engaging in social media, the verbal operants will be useful to differ between behaviors.

A mand in social media can for example be to ask or request for information. A person posts on the Facebook wall to an organization: "Can I have information about how to apply for a job at your company?". The organization replies back at the Facebook wall: "Yes, you will find more information at our website here: www.nn.nn". The person asking was deprived for information about job opportunities and the information about jobs worked as the reinforcer.

Insert figure 2 about here

The function of the verbal operant tact is often called a describing function. Skinner (1957) emphasized that "a tact is a verbal operant in which a response of given form is evoked by a particular object or event or property of an object or event" (p. 81). Sundberg (2007) states that the tact is a type of verbal operant in which a speaker names things and actions that the speaker has direct contact with through any of the sense modes. A tact is controlled by a nonverbal discriminative stimulus. Discriminative stimulus is a stimulus in the presence of which a particular response will be reinforced (Malott, 2007). Example of tact in social media can be when a person is uploading a photo of a dog at Facebook, and another person replies "Beautiful dog".

Insert figure 3 about here

Echoic behavior is verbal behavior under control of verbal stimuli. This means that it is point-to-point correspondence between the verbal response and the verbal stimulus (Skinner, 1957). Sundberg (1993) stresses that imitation of sounds and words that are our own or others are an important source for learning vocal behavior. An example of echoic behavior will be a person reading a statement at a web page and repeats the exact words in the statement for himself.

Insert figure 4 about here

Intraverbal behavior is behavior under control of verbal stimuli, but has unlike echoic behavior no point-to-point correspondence (Skinner, 1957). The controlling variable is the speaker's prior verbal behavior. Examples of intraverbal behavior include counting. If one

person counts 1,2,3 loud and another person continues with saying 4, 5, 6. It is also intraverbal behavior when you read a part of a sentence and fulfills it with a verbal response. In social media an example of this can be if a person state: "The best restaurant in town is….". This will probably generate discriminative stimuli controlled by different verbal responses.

Insert figure 5 about here

Autoclitic behavior is behavior depending upon other verbal behavior and modifies the effects of other verbal behavior (Catania, 2013). The verbal responses are under control of private events with the person, and these verbal responses affect the effect of primary verbal responses for the listener (Holden, 2003). Autoclitic behavior has developed as instructions to the listener, which helps him to exhibit the behavior leading to reinforcement and thereby increasing the likelihood that the speaker's behavior also is reinforced (Skinner, 1987). Autoclitic behavior is dependent on or modifies other verbal behavior of the speaker (Torneke, Hayes, Barnes-Holmes, 2010, p 32).

Insert figure 6 about here

Verbal operants and their role in social media are summarized in the table below.

Insert table 1 about here

Rule-governed behavior

Rule-governed behavior is behavior under stimulus control and a rule is a verbal discriminative stimulus (Baum, p 159). Behavior under discriminative control of a rule is defined as rule-governed behavior (Catania, 2013). To understand rule-governed behavior, rules must be explained. Skinner defined a rule as a verbal discriminative stimulus that points to a reinforcement relation that is a relation between activity and consequences. A rule can be written and spoken. Skinner (1969) differed between four different rules: Promise, threat, warning and advice. Promise is a rule where the person giving the rule also is presenting a reinforcing consequence. In social media an example of a promise can be a status from a business: “Like our page and you are in the competition of an iPhone5”.

Insert figure 7 about here

A threat is a rule where the person giving the rule also presents a punishing consequence, in social media it can be represented as a statement like: “Still haven´t participated in our questionnaire? Do it or you will loose a lot of money!”. A warning is a rule where the person giving the rule also presents the reinforcing/punishing consequence, but the aversive

consequences is not arranged by the speaker. Advice is a rule where both the behavior and the consequence are described, but the person giving the advice does not present the consequences.

Rule-governed behavior always involves two relations: the long-term ultimate relation and a short-term proximate reinforcement relation for following the rule. Rule-governed behavior can explain how behavior is affected without the apparent intervention of shaping contingencies (Torneke, Luciano and Salas, 2008).

Cultural selection and social media

Skinner (1984) emphasized that behavior can be seen as dependent on three levels of selection. These three levels are natural selection, behavioral selection and cultural selection. Natural selection means that genes are copied and transmitted directly from parents to offspring (Dawkins, 1976). Characteristics that promote survival and reproduction are passed, while opposite traits die out. Behavioral selection is leading to new responses that may produce consequences and refers to each individual learning history (Skinner, 1984). Behavioral selection can be divided into respondent and operant conditioning. The third level of selection is the result of several individual's operant behavior (Glenn, 1991). Sigrid S. Glenn has developed a framework for analyzing this level of selection (Glenn, 1988, 1991, 2003). The interaction is a response and the response is not only a part of a single individual's behavioral repertoire, but also a group's behavioral repertoire (Glenn, 1991; Skinner, 1984). Skinner (1981) stressed that it is not the reinforcing consequences for individual members, although the effect on a group that is responsible for the evolution of culture. As of these definitions social media seen as a selection of behavior of a group may be analyzed by using the theoretical framework developed by Sigrid S. Glenn.

Suggestions for research

An advantage of using functional analysis to analyze behavior in social media is that we get observable and manipulable effects. In this study the emphasis has been on social media and verbal behavior. It can also be interesting to look at social media as a cultural phenomenon and use the framework from Sigrid S. Glenn to analyze how and why people use social media from a perspective of cultural selection. Is there a cultural practice in social media? How is this practice shown? Does it affect the way people interact in social media? A limitation of this can be that it is difficult to measure cultural phenomena in a laboratory.

More empirical studies within the intersection of behavior analysis and social media should be performed to explain and predict behavior in social media. From a marketing point of view it would be useful to do research within social media where the effect of advertisements are measured and advertisements are optimized to have the most effect, where advertisements are made from the theoretical framework of verbal behavior. Within consumer behavior more research has been done. Hursh (1980) suggests using economic concepts combined with behavior analysis to get a better understanding of consumer behavior, and researchers like Rachlin (1976) and Foxall (2003) have suggested the same. We may draw knowledge from this research within consumer behavior to explain the behavior and choices people make in social media.

Catania (2013) emphasizes that reinforcement schedules have a great significance of explaining the establishing and maintenance of behavior. Reinforcement schedules may offer an explanation to why more and more people are using social media, and it might explain why some applications within social media, for example Facebook and Twitter, are extremely popular, while other applications hardly have any users. Example of research questions could be: What

kind of mechanisms are working to make many people checking their own and others profile several times a day? And will these mechanisms stop working after some time?

This study have seen on different verbal operants within social media, an interesting continuation of this could be to map the mostly used verbal operants in social media in a bounded research area.

In my opinion, motivational operations are a key concept to understand behavior in social media. In this study I have mapped some of the possibilities to use motivational operations to explain the term motivation in social media. More research should be done within this area.

Concluding comments

The technological innovations of Web 2.0 have lead to the occurrence of social media, which in turn have caused a change in how people are interacting with each other and organizations. Two traditional approaches to explain interaction have been outlined in this study. The approaches offer a structural approach to explain behavior and the behavior is analyzed in terms of its form and structure. As a contrast, the functional approach of behavior analysis sees behavior as a functional relationship between antecedents, consequences and the target behavior. In this study I shown that concepts as verbal behavior and rule-governed behavior within behavior analysis can be used to understand and explain and influence interaction in social media. I have also suggested that concepts from behavior analysis can be used to understand different aspects of social media, such as cultural selection, consumer behavior and reinforcement schedules.

The advantage of behavior analysis in this context is the possibility not to only explain behavior, but also predict and influence behavior and by this be able to observe and manipulate

effects of social media. For academia this shows a new way of understanding interaction in social media and can be a supplement to other methods as well as it is a framework that works independently. For practitioners this framework offers a tool to get interaction with users in social media, and it may be used in marketing of organizations to enhance and influence interaction.

This study have outlined how to understand interaction in social media from a behavior analytic view and shown how it is possible to influence interaction from a behavior analytic view. Although empirical studies should be conducted to underpin the theoretical framework outlined in this study.

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Tables and Figures

Table 1

Overview of verbal operants, antecedents and example from social media

Antecedent	**Verbal operant**	**Consequence**	**Example from social media**
Motivating operations	Mand	Direct effect	A friend request at Facebook, the "requested friend" responds yes.
Discriminative stimulus	Tact	Social reinforcement	A person comments "What a beautiful sunset" at a photo. Another person replies "Yes, it is really beautiful".
Verbal stimulus without point-to point correspon- dence or formal similarity	Intraverbal	Social reinforcement	A person asks "What dress should I wear?" in her status. Another person replies: "The red one"
Verbal stimulus with point-to-point correspondence and formal similarity	Echoic	Social reinforcement	A person has written "Toyota is the best" as his status. Another person reads it and repeats for himself "Toyota is the best"
The verbal behavior of the person it self	Autoclitic	Direct effect	A person writes as his status on Facebook: "Strawberries make me even happier!"

Speaker Need to fix the car (MO)	**S^D** A person on Facebook that know about cars	**R** "Recommendations of garages?"	**S^R** "Car Care is good at fixing cars"	**R** "Thanks"
Listener		"Recommendations of garages?" **S^D**	"Car Care is good at fixing cars" **R**	 **S^R**

Figure 1. Example of a verbal episode on Facebook

Speaker Needs a job (MO)	**S^D** A person knowing about a company that has jobs availble	**R** "How can I apply for a job at your company?"	**S^R** "Find information at our website"	**R** "Thanks"
Listener		"How can I apply for a job at your company?" **S^D**	"Find information at our website" **R**	 **S^R**

Figure 2. Verbal episode illustrating the verbal operant mand

Speaker	S^D A person has seen people commenting photos on Facebook	R Uploading a photo of his/hers dog	S^R “Beautiful dog!”	R “I know, thanks”
Listener		A photo of a dog is appearing in the newsfeed on Facebook S^D	“Beautiful dog!” R	“I know, thanks” S^R

Figure 3. Verbal episode illustrating the verbal operant tact

Speaker	S^D A person have been reading a book and want to recommend the book to other on Facebook	R “Mengele Zoo is the best book I have ever read”	S^R 
Listener		“Mengele Zoo is the best book I have ever read” S^D	Listener repeats for himself: “Mengele Zoo is the best book I have ever read” R

Figure 4. Verbal episode illustrating the verbal operant echoic

Speaker	S^D A person wants to go to a good restaurant and posts	R “The best restaurant in town is….”	S^R “Kitchen” or “Salt and pepper”	R “Good suggestions”
Listener		“The best restaurant in town is…” S^D	“Kitchen” or “Salt and pepper” R	“Good suggestions” S^R

Figure 5. Verbal episode illustrating the verbal operant intraverbal

Speaker	**S^D** A person is moving, and wants to inform his friends on Facebook	**R** “I am happy to say that I am moving next week”	**S^R** “It is great that you are happy about moving!”
Listener		“I am happy to say that I am moving next week” **S^D**	“It is great that you are happy about moving!” **R**

Figure 6. Verbal episode illustrating the verbal operant autoclitic

A company (speaker) wants to increase number of users at their Facebook page and place an advertisement on Facebook	**Presents a rule** “Like our page and win a vacation to the Caribbean “
	 **Listener likes page**

Figure 7. Verbal episode illustrating rule-governed behavior

Understanding the influence of advertisements in social media

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Abstract

The study seeks to give a better understanding of the impact advertisements in social media has on behavior of a target segment, and to find whether there is a difference in the response to different advertisements. A Norwegian counselling service providing the public with information about alcohol, drugs and substance abuse, wanted to enhance traffic to its website within the target segment of youths experimenting with drugs. The counselling service is the case organization of this study. A pre-study of focus group interviews were conducted to identify the use of social media within the target segment. After this, a social networking advertisement campaign was arranged with ABAB research design. Referring traffic from facebook.com to the website of the case organzation was measured during a week with no advertisements running (A). The next week, six advertisements were published on Facebook and traffic was measured (B). The week after all the advertisements were withdrawn (A) and the last week the same advertisements as in week two were published (B) on Facebook. Results show that traffic to the website was higher in the weeks with advertisements running, compared to the weeks without advertisements, and there is a difference in the response to different advertisements.

Keywords: social networking sites, interaction, Facebook, advertisements, verbal behavior

Ninety one percent of girls and ninety percent of the boys at the age between 16 and 24 logged into an online community during a week according to statistics from Statistics Norway (SSB, 2011). Rheingold (1993) and Wellman (2000) explain a community as consisting of people with shared interests and experiences. With the emergence of new technology that has made it possible to share content and interact with each other, a wide range of social media has occurred and online communities have emerged. Kaplan and Haenlein (2010) differentiate social media between social networking, social bookmarking, video-sharing, picture-sharing, professional networking, user forums, blogs and microblogging. Facebook is by far the most used social medium in the world with over a billion users by March 2013 (facebook.com). With 1/7 th of the worlds population gathered in one application, Facebook has become an arena to promote organizations and services. Social media may escpecially benefit non-profit organizations since social media are free of use and have built-in interactivity (Lovejoy, Waters & Saxton, 2012). A relevant question in this context is therefore how non-profit organizations can interact with their users and how to use social networking sites as Facebook to reach and influence its target segment?

Social media and nonprofit organizations

Non-profit organizations vary in terms of mission, size and impact (Anheier, 2000). Salamon and Anheier (1997) give five core characteristics of non-profit organizations: 1) have an institutional frame, 2) institutionally separate from government, 3) not returning profits to owners, 4) control their own activities, and 5) are non-compulsory in nature and have some degree of voluntary input in either the activities or management.

Waters (2009) states that social media provide opportunities for nonprofit organizations. But Waters (2009) also found that nonprofit organizations lag behind in adopting social media

and are mostly using social media to streamline management functions and educate the public. Waters, Burnett, Lamm and Lucas (2009) found that nonprofit organizations are failing to use the interactive function of Facebook. O´Reilly (2007) says that organizations managing to embrace the potential of Web 2.0 have a competitive advantage by learning from users and encourage participation since social media has made it possible for organizations to be available for users, get feedback and respond directly to questions and increase interaction with their users (Pantano, Tavernise, & Viassone, 2010).

A case study of the American Red Cross shows that social media is increasing its importance and is essential to get a two-way dialogue with users, media and communities (Briones, Kuch, Liu & Jin, 2010).

Possibilities and challenges for nonprofit organizations using social media

Through social media organizations can get in contact with more potential users of the services of the organizations and social media might be a tool to educate users (Waters & Lo, 2012). For example CERN, the European Organization for Nuclear Research, used photos and links at their Facebook page to explain about the observed particle consistent with Higgs boson in July 2012.

Social media can also be used to spread the word about events and address questions to users (Wasserman, 2005). The music festival, Norwegian Wood use its Facebook page to promote different events, like registration for volunteer work during the festival (at April 4th 2013), and when some users asked whether the page for registration was not working, the administrators of the Facebook page replied immediately.

But there are also challenges by using social media. In the case study of the American Red Cross, availability of human resources is highlighted as the greatest barrier to have an

extended use of social media (Briones, Kuch, Liu & Jin, 2010). Exchange and dissemination of information in social media are independent of whether the organizations are present at the exact time of someone interacting with the organization in social media, and it can therefore be challenging to have an overview of the interaction and content at all times. An example from a Norwegian provider of TV channels, Canal Digital, shows this. In December 2012 a customer had his TV signals suddenly shut down with no apparent reason. This customer wrote a post on the Facebook page of Canal Digital stating how furious he was with the company. His post got over 6000 "likes" and 400 comments during one day, and national media made news articles about the response to his post.

Interaction is the key to success

Web 2.0 is a term used to describe the change in use of technology of design patterns and business models (O`Reilly, 2007). The term was introduced by O´Reilly Media in 2004, and has since become the standard to describe the shift in web technology and use. Social media are used to describe applications making use of the Web 2.0 technology and at the same time making the content available for the public to share and contribute (Kaplan & Haenlein, 2010). Kaplan and Haenlein (2010) continue their definition to emphasize that the exchange of user-generated content and the two-way effect is the core concept of social media and interaction is the key to understand behavior in social media. O´Reilly (2007) support this view and states that the key to market dominance in the Web 2.0 era is the network effect from user contributions. Businesses having success by their use of the Internet must engage consumers in an interactive and social way (O´Reilly, 2007). Interaction can for example be a person "liking" a page, commenting on a post, commenting on a photo or clicking on an advertisement, and by clicking on the

advertisement be referred to the web site of the organization to get more information or even interact by the use of other digital channels like phone calls, chatting and sending SMS.

Functional approach to interaction

Social sciences have traditionally explained interaction from a structural approach that points to the structural aspects of behavior by analyzing it by form and structure (Pierce & Cheney, 2008). Behavior analysis is a discipline, which through functional analysis seek to describe, predict and control behavior (Catania, 2013). Functional analysis is the technique used to identify the antecedents and consequences that control behavior, and the goal is to find the functional relationship between a target behavior, antecedents and consequences (Catania, 2013).

One example of a functional relationship in social media can be when a person needs to fix his car. A post on Facebook may be an antecedent stimulus to get recommendations to garages where the car can be fixed, and getting help to fix the car function as a reinforcer. As this example show, functional analysis can help us to understand how target behavior function in relationship to antecedents and consequences.

According to the behavioral response functions we can analyze the environment in terms of stimulus functions (Pierce & Cheney, 2008). Skinner (1953) categorized behaviors of human and animals into three key parts: discriminative stimuli, response and reinforcer. Also called the three-term contingency. The three-term contingency is fundamental to understand operant conditioning, which means a process where behavior is strengthened by its consequences (Skinner, 1953). A stimulus following a response (R) and by this increasing the probability of similar response, has a reinforcement function (S^R). The events that regularly precede an event and set the occasion for the behavior are called discriminative stimuli (S^D). Procedures of

withholding reinforcement for a previously reinforced response are called extinction and extinction is also a behavioral process (Pierce & Cheney, 2008).

Verbal behavior

Operant behavior refers to behavior that operates on the environment and that produces consequences that in turn strengthen the behavior. This also includes verbal behavior (Skinner, 1957). Skinner (1957) further defined verbal behavior as behavior reinforced through the mediation of another person´s behavior verbal. By this means that verbal behavior refers to all vocal, written and signed behavior where this particular behavior is reinforced by another person. Verbal episodes in social media can therefore be analyzed by using the three-term contingency.

Verbal operants help us to identify functional verbal repertoires. Skinner (1957) categorized verbal operants into mand, tact, echoic, intraverbal and autoclitic, and defined them in terms of stimulus condition and consequences. The verbal operant mand involves that the form of the response is under the functional control of motivating operations (MOs) and specific reinforcement (Sundberg, 2007). To ask or request for information in social media are an example of a mand. Tact is often called a describing function, and is evoked by "a particular object or event or property of an object or event" (Skinner, 1957, p 81). One example of a tact in social media can be when a person is uploading a photo of a dog at Facebook and another person comments “Nice dog”. Echoic is a verbal operant under control of verbal stimuli, and it is point to point correspondence between the verbal response and the verbal stimulus (Skinner, 1957). For example a person reading a statement “The best restaurant in town is Eat” at a social networking site, and repeats the exact statement to himself. Intraverbal behavior is also behavior under control of verbal stimuli, but has no point-to-point correspondence. An example from Facebook would be a person responding to phrases and posts like “1,2,3, 4” with “5,6,7”. The

autoclitic operant is depending of other verbal behavior and modifies the effects of other verbal behavior (Catania, 2013).

Bondy, Tincani and Frost (2004) distinguish between the verbal operant mand and the other verbal operants since the mand specifies its own reinforcer and the other verbal operants are established and maintained by the verbal community, also called "educational" reinforcement or social reinforcer by Skinner (1957).

Motivating operations are the behavior analytic way of explaining the concept motivation in human behavior, and how this can increase and decrease the effectiveness of a consequence (Laraway, et. al 2003). Motivating operations refers to an event or stimulus condition that momentarily alters (a) the value of consequences that act as types of reinforcement or punishment, and (b) the probability of behaviors that have been previously associated with such consequences (Michael, 1982). Motivating operations can be unconditioned and conditioned (Michael, 1982). Unconditioned motivating operations (UMO) are not learned, and example of UMO´s can be deprivation of food, water, cold and warmth. Conditioned motivating operations (CMO) are variables that alter the reinforcing value of other stimuli as a result of a learning history (Michael, 1982). Michael (1993) differed between surrogate, reflexive and transitive CMO´s. Surrogate conditioned motivating operations are developed when a previously neutral stimulus is paired with an unconditioned motivating operation or a conditioned motivating operation (Michael, 1993). Fagerstrøm, Foxall and Arntzen (2010) point out that surrogate conditioned motivating operations can give a functional explanation of consumer behavior. This can be related to behavior at the Internet and explain why some people show preference to shop on certain websites.

Reflexive conditioned motivating operations are previously neutral stimuli that acquire motivating functions by being correlated with some form of worsening or improvement (Michael, 1993). It is exemplified by warning stimulus in a typical escape-avoidance procedure (Cooper, Heron & Heward, 2007). An example from social media can be if two people are chatting and previous conversations have taken a turn that has lead to discussions that one of the persons will describe as "uncomfortable". And this person interrupts the conversation by asking a diverse question to avoid discussion. The conversation has a behavior-altering effect since it evoke a behavior as a result of a consequence linked to the behavior in the past.

Transitive conditioned motivating operations are previously neutral stimuli whose occurrence alter the reinforcing effectiveness of another stimulus and evoke responses that produce that stimulus (Michael, 1993; Langthorne & McGill, 2009). For example, an advertisement for bikinis on Facebook may have altered effect if you just have ordered a vacation to a place with beach and sun. The vacation alters the value of buying bikini and makes it more reinforcing.

Rule-governed behavior

Rule-governed behavior is behavior under stimulus control, and describes behavior that is determined by verbal antecedents (Zettle & Hayes, 1982). Catania (2013) agrees and defined rule-governed behavior as behavior under control or influence of verbal antecedents. As of the definition of verbal behavior including all vocal, written and signed behavior (Skinner, 1957), rule-governed behavior might be a tool to describe interaction in social media. Rule-governed behavior always involves two relations: The long-term, ultimate relation and a short-term proximate reinforcement relation for following the rule.

Within behavior analysis there have been described three functional units of rule-following behavior: pliance, tracking, and augmenting (Zettle & Hayes, 1982; Hayes & Ju, 1998).

Pliance is rule-governed behavior under the control of consequences that are socially mediated and there are correspondence between the rule and the rule-followers behavior, (Hayes & Hayes, 1989; Zettle & Hayes, 1982). When a person posts "Have you paid your taxes this year?" on Facebook, this might be a social reinforcement for others seeing this post to pay taxes.

Tracking, is rule-governed behavior controlled by correspondence between the rule and the way in which the environment is arranged (Hayes, Zettle & Rosenfarb, 1989). An example of tracking can be someone giving an advice of directions to a tourist attraction "Follow the road and the turn right". If the rule/advice thereby controls the listener´s behavior as a correspondence of the advice and how to get to the tourist attraction, it is tracking.

Zettle and Hayes (1982) define augmenting as "rule-governed behavior under the control of apparent changes in the capacity of events to function as reinforcers or punishers" (p. 81). Zettle and Hayes (1982) differ between motivating and formative augmentals. Motivative augmentals are rules that alter the degree of previously established consequences to function as reinforcers or punishers (Barnes-Holmes, O'Hora, Roche, Hayes, Bissett, & Lyddy, 2001). Example from social media can be advertisements on Facebook saying: "Buy these shoes and get even happier". Formative augmentals are rules that establish a new stimulus as a reinforcer or punisher (Zettle & Hayes, 1982). An example from social media can be an advertisement stating: "Join the competition and win an iPhone5".

As of Skinner´s definition (1957) of verbal behavior it is behavior where another person mediates the reinforcing consequences. This means that all spoken and written behavior in social media can be functionally analyzed within the framework of operant behavior.

This study seek to use the behavior analytice framework and a functional approach to understand the interaction in social media. The approach identifies antecedents and consequences that control behavior, and will give observable and manipulable effects. As far as I know, there have been no previous studies using this framework and approach to investigate interaction in social media. The study will therefore give new knowledge of understanding interaction in social media. There are several ways of interacting with users at Facebook, in this paper the effect of advertisements made from a functional approach are investigated. The study seeks to give a better understanding of the impact advertisements in social media has on behavior of a target segment, and to find whether there is a difference in the response to different advertisements, and whether the difference can be explained from the stimulus introduced.

A case organization is presented and used as an example. The methods for the empirical study are mapped and explained. Results of the campaigns are presented, discussed and at the end a conclusion is made and suggestions for further studies are made.

Method

A case organization was examined and three focus group interviews were conducted. An ABAB design (Engel & Schutt, 2012) was chosen to measure the difference in traffic from Facebook to the web page of the case organization when advertisements were active and not. The ABAB design includes repeated measurements under controlled conditions. Engel and Schutt (2012) emphasize that if the intervention is effective the behavior should only be improved during intervention. The first A in ABAB represents measurement of the baseline, the first B is

measurement when an action is introduced, the second A measures a new baseline and what happens when the action introduced in phase B is withdrawn. The last B represents when the action again is introduced and measured (Kazdin, 1982).

As a pre-study, three focus group interviews were conducted. After the results from the focus groups were ready, advertisements for the case organization were made.

Case organization: RUStelefonen

RUStelefonen is a nationwide (Norway) information service on drugs and substance abuse. The objectives of RUStelefonen are to provide factual information about drugs and intoxicants, to have an overview of the different services dealing with treatment of substance abuse in Norway and provide advice and guidance through professional counseling. The main target segment of RUStelefonen is young people experimenting with drugs. But they are also a resource of information for professionals, relatives and others. The users of RUStelefonen are to be anonymous. RUStelefonen wants to use social media to increase the quantity of inquires to their anonymous channels. The purpose of being present in social media for RUStelefonen is to increase the interaction with the target segment and thereby enhance the quantity of inquires to the anonymous channels of RUStelefonen.

The anonymous channels are found at the web page of RUStelefonen. It has defined five different anonymous channels to be contacted through; by phone to the number 08588, by SMS to 08588, ask questions at the web page rustelefonen.no, chat and through two other web pages for youths: klara-klok.no and ung.no.

RUStelefonen is present in social media. The organization has a Facebook page and is using the Facebook page to communicate research and facts with the users of the page.

RUStelefonen also have been using advertisements at Facebook to increase the number of likes at the Facebook page.

Pre-study: Focus group interviews

Kitzinger (1995) defines focus groups as “a form of group interview that capitalizes on communication between research participants in order to generate data.” The use of focus groups has been increasingly used for research in social sciences, and its popularity as a research tool is easy to understand since it is quick, easy and cheap (Hoyle, Harris and Judd, 2002, p 406). Focus groups were used to identify the use of social media among young people between 15 and 20 years, whether the focus groups had heard about the case organization and the extent to which they acquire information about drugs through social media. Focus group interviews were chosen as the method appropriate to examine the experiences and opinions, the discussion in the focus groups are intended to encourage interaction between participants. An interview guide (Appendix B) with the overall themes "Use of social media", "Information about substance abuse" and "RUStelefonen and social media" was drawn up in cooperation with the case organization. Three focus group interviews were conducted.

The participants of the focus groups consisted of three groups . The inclusion criteria for participation was that the participants were between 15 and 20 years and users of social media. It was from 5 to 8 members in each group. Two of the groups consisted of high school students, aged between 16 and 18 years. In group 1, there were five females and two males who were respondents, group 2 consisted of four females and four males. The last group consisted of students from a university college, age between 19-20 years, 3 females and 2 males.

Results of pre-study

Young people between 15 and 20 are active users of social media. During a day the focus groups logged on to social media from 5 to 20 times. Facebook is the application mostly used among the focus groups. In addition to Facebook they were using other social media applications as Instagram, Twitter and Snapchat. The focus group with students also used LinkedIn.

The focus groups are seeking information about people, photos, shops, eating places on social media. The focus groups stress that social media has taken over the function of other existing channels, and see this as an benefit of social media. As an example, the focus groups mentions that the chat function on Facebook has taken over the role of Messenger and partly SMS, and the application Snapchat is used in many cases instead of MMS.

The focus groups found it helpful to use the events feature in Facebook, because they receive direct invitation to events, or by creating events themselves. To follow a page on Facebook the focus groups with high school students had specific criteria. The page must contain something they find interesting and the page must reflect their interests and opinions, and be socially accepted among their friends. The focus group with students showed a lower threshold to follow a page on Facebook. If a friend or acquaintance invited them to like the page, they usually click “like”.

The focus groups were in agreement that it was difficult to keep track of all the changes related to use and ownership rights at applications on social media.

The three focus groups prefer to get information about drugs and drug use through personal sources, where friends are the most common source. There was also a distinction between information on alcohol versus drugs. With regards to information about alcohol the participants in the focus groups asked both parents and friends, while information about drugs

they preferred to find information on the internet using google and wikipedia. Several of the young people in the focus groups had received information about drugs and substances through ads on Facebook. This was advertisements leading to information on treatment facilities for addicts and factual information about drugs.

The focus groups had not observed the case organization on social media. The focus groups association to the case organization was people having problems with substance abuse, drug addicts, their families, help for addicts.

A question of what kind of information they wanted to find associated to the case organization on social media, the focus groups answered that they wanted to find facts about drugs and different degrees of intoxication. All the focus groups emphasized that they did not want to use social media to get information about drugs, one of the group members exemplified by saying that he would never ask a question openly on the Facebook page of RUStelefonen. If they were to use social media in this context, it would be through advertisements on Facebook. Otherwise, the focus groups used google to find the information they wanted. Based on the focus group interviews it was decided to create a field experiment to enhance traffic from Facebook to the web page of RUStelefonen.

Field experiment

Participants

The inclusion criteria of the advertisment campaigns were to be within the age from 15 to 25 years, and the advertisements were only shown to people from Norway. This segment was chosen because the case organization wanted to enhance the quantity of inquries from their main target group of young people.

Advertisements

The Facebook advertisements were made after the focus group interviews. Six advertisements (Appendix A) were made in cooperation with the case organization, and the advertisements have their basis in behavior analytic theory and three-term contingency. An example of one of the advertisements are shown in figure 1:

Insert figure 1 about here

The speaker is the case organization by its advertisement, and the motivational operation for placing advertisements on Facebook are more users at its web site. The discriminative stimuli (S^D) of the listener is seeing the advertisement on Facebook and setting the occasion for the behavior. "Can you get high on banana skin?" is the stimulus following the response (R) and the sentence "Find out on the web page at www.xxx.no. Click here!" functions as the reinforcing consequence (S^R) for the listener (Baum, 2005).

Running advertisements on Faceback implies to be charged for the number of clicks each advertisement receives (facebook.com). A daily budget of 100 NOK was set for each advertisement. The limit of 100 NOK was determined by the case organization. The advertisements were set up with different hyperlinks to the web page to the case organization. The advertisements had to be approved by the case organization and Facebook before they were published. RUStelefonen wanted to make sure the advertisements were in line with their guidelines, and the advertisements also had to pass the guidelines of Facebook.

When the advertisements were to be published for the first time, two of the ads had to be changed according to the guidelines for Facebook. The combination of picture and text in two ads were not approved and we had to change them. This led to a delay of half a day in the first

campaign period of running the advertisements. The advertisements were active from Monday at 12.00 am til Sunday at 00.00 in the two campaign week.

Apparatus

The Facebook ads account of the case organization was used to create the advertisements. The system Webtrends Analytic was used to collect statistics about visitors to the web page of the case organization. Photos to the advertisement were bought from www. colourbox.com. The photos had to be scaled to a maximum width of 100 pixels and be saved in the format .jpeg.

Procedure

The advertisements were published at Facebook and statistics of how many clicks each advertisement got, were collected by logging into the Facebook ads account of the case organization. It was also necessary to collect data showing the referring domain of traffic to the web page of the case organization, this was achieved by using Webtrends Analytic.

Results

The table show the results from measuring the traffic from facebook.com to the web site of the case organization during four weeks. In week 1 and 3 there were no advertisements referring to case organization websites, in week 2 and 4, six advertisements were active at Facebook.

Insert table 1 about here

During the first campaign week (week 2), a total of 641 clicks were registered to the website of the case organization, the second campaign week 582 clicks were registered. The

advertisements had less response during the second campaign period (week 4) with totally 59 less actions executed during the last campaign period.

Insert figure 2 about here

The response rate of the six advertisements was different during the two campaign weeks. The six advertisements show different responses.

Insert table 2 about here

Advertisement number 1 and 3 have the highest response rate in both campaign weeks. Advertisement number 1 included a picture of a banana skin and the text " Can you get high on banana skin? Find out on www.xxx.no pages. Click here!". This advertisement had 264 clicks during the first campaign week and 246 clicks in the second campaign week. Advertisement number 3 showed a picture of a man drinking from a bottle and the text "When should you stop? You can get help to calculate your blood-alcohol level at www.xxx.no. Click here!" This advertisement had 351 clicks during the first campaign week and 228 clicks in the second campaign week.

Advertisement number 2 and 4 have the lowest response rate in both campaign weeks. Advertisement number 2 consisted of a photo of bottles and the text "Can't you limit yourself when you first start drinking? Chat with us at www.xxx.no." The advertisement got 38 clicks in the first campaign week and 46 clicks in the second campaign week. Advertisement 4 showed a picture with question marks and the text "Do you have questions about drugs? Ask us at

www.xxx.no. Click here!". The advertisement had respectively 43 and 4 clicks during the two campaign weeks.

Discussion

I have examined the impact of advertisements at the social networking site Facebook, and whether there is a difference in the response rate to different advertisements on Facebook. The results show that there is a higher click rate during the two campaign weeks, and there are differences between the response rates of the different advertisements during the campaign weeks. This study demonstrates that the traffic increases with advertisements, you might say that a social networking advertisement campaign will increase the visibility of a product or service and thereby increase the traffic to a website linked from the advertisements, but since the study also shows a difference of the clicks of the different advertisements that may be an indication of that the impact of each advertisement is various, and that the stimuli introduced in each advertisement is crucial to get people to click on the advertisements.

The baseline week gave 32 referrals from facebook.com to the website of the case organization, while the first campaign week gave 641 referrals from facebook.com. The advertisements having the highest number of clicks of the first campaign week are also the same advertisements with the highest number of clicks during the second campaign week. The same principal is current for the advertisements getting least clicks. The least clicked advertisement was advertisement number 4, this had only four clicks during the second campaign period, while the advertisement with the most clicks had 246 clicks during the same period. Advertisement number 1 and 3 had the most clicks during the campaign weeks.

Zettle and Hayes (1982) and Catania (2013) describe rule-governed behavior under control or influence by verbal antecedents, and three functional units of rule-following behavior

have been described by Zettle and Hayes (1982). The review through this study show that advertisements in social media can be categorized as verbal behavior. Malott (1989) emphasize that whether a rule governs behavior depends on how strong contingencies the rule describes, what kind of outcome the rule describes, and to what extent the person following the rule has experience that the contingencies the rule describe, are real. Advertisement number 4 “Do you have questions about drugs? Ask us at www.xxx.no. Click here!” had the lowest number of clicks. The contingency that described in this rule might be too general. The rule stated functions as the antecedent, and it specifies the behavior ”Click here”, as a consequence of clicking you may get ”answer to your questions about drugs.” This advertisement should be seen in the light of the most clicked advertisement ”When should you stop? You can get help to calculate your blood-alcohol level at www.xxx.no. Click here!”. This rule still specifies the behavior ”Click here”, but the rule is concrete and specifies the reinforcer: ”get help to calculate your blood-alcohol level..”

To explain the difference of clicks on the different advertisements, it is also useful to look at motivating operations. Laraway et. al (2003) point out that motivating operations can explain how motivation in human behavior an increase or decrease the effectiveness of a consequence.

This study is not without limitations. As this is a field experiment it offers less control of the variables than in a lab experiment and it may affect the internal validity (Hoyle, Harris and Judd, 2002). A lab experiment will be conducted in a controlled environment and it will reduce the effects of confounding variables (Howitt and Cramer, 2008), but a lab experiment may at the other hand be critisized for lacking external validity. And a field experiment will at the opposite increase the external validity since it is in the natural environment of the participants. The advertisements were run with the same criteria during the two weeks of campaigns, a daily

budget of 100 NOK was set for each advertisement and the advertisements had the same target segment of people between 15 and 25 years. The daily budget of 100 NOK may have lead to that the advertisements that were most clicked reached the daily budget and the advertisements did not run all day. The advertisements with most clicks, might have even more clicks if the they were not limited by the daily budget.

Heatherton and Walcott (2009) emphasize that social interactions form the basis of social relations, and Kaplan and Haenlein (2010) states that interaction is the key to understand behavior in social media. In this study I have explained interaction in social media within the behavior analytic framework with the use of concepts of verbal behavior and by the use of functional analysis we can understand and identify antecedents and consequences of behavior in social media and find the functional relationship with the target behavior. For non-profit organizations that according to the study of Waters et. al (2009) have been failing to use the interactive functions of social media and might have limited resources and profits to promote themselves, this approach gives a tool with observable and manipulable effects.

In the present study I have sought to explain interaction and the impact advertisements have on a target segment in social media from a behavior analytic view. Several researchers have tried to explain social issues from the framework given by behavior analysis. Sandaker (2006) outlines possibilities for social issues within law, economy, sociology & anthropology and business & management to be addressed within the behavior analytic framework. Sigurdsson, Foxall and Saevarsson (2010) use experimental analysis to understand consumer behavior.

The effects of interaction in social media are of important social issue and should be explored more. As a continuation of this study, it would be interesting to optimize the advertisements during the campaign period and see if that will increase traffic to the website

even more. In addition the influence of how friends are interacting in social media would be an interesting theme to explore. Two of the focus groups in the pre-study emphasized the importance of pages at social networking sites to be socially accepted among their friends before they could like the pages.

Conclusion

A Norwegian counseling service, a non-profit organization with scarce resources, wanted to enhance the number of inquires to its anonymous channels by using social media. A pre-study with focus groups interviews was conducted to identify the use of social media among the target segment and to find out whether the target segment had some knowledge about the case organization and to find out how the focus groups acquire information about the services provided by the case organization - via social media or through other channels. The focus groups interviews concluded that the target segment did not acquire information about the services of the case organization through social media but through personal relations. If the focus groups were to use social media to find information about the services, it would be through advertisements on Facebook. Accordingly it was decided to use advertisements to enhance traffic to the web site of the case organization. Six advertisements were made with basis in behavior analytic theory and published on Facebook using a ABAB design to measure the difference in traffic.

The results show that during the two weeks with advertisements on Facebook there are more traffic from Facebook to the web site of the case organization than the weeks without advertisement on Facebook. Since the advertisements also show different response and the advertisements showing the lowest and highest response in the first week of interventions also show similar response during the second week of intervention, it is likely to conclude that the

strength of rule the advertisement presents, makes an important difference of how many people clicking on the advertisement.

This study offers a behavior analytic framework to understand interaction in social media, and for the academia it shows a possibility to use behavior analysis to understand social issues usually explained by disciplines with methods and framework from social sciences. It will give additionally knowledge and by this a better understanding of social media as a social issue. This study may also be of great value for practioners working with social media since it offers knowledge about rules and antecedent stimulus in verbal behavior that have the most and least effect, and may therefore be a tool to enhance the effects of verbal behavior in social media.

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Tables and Figures

Table 1

Traffic to the website with reference from Facebook

	Traffic to the website through the campaign weeks (week 2 and 4)						
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1	5	2	3	5	11	6	2
Week 2	85	132	115	108	101	93	7
Week 3	3	4	3	1	8	1	7
Week 4	114	107	123	74	72	81	11

Table 2

Clicks on advertisements sorted on each advertisement

	Clicks on advertisement week 2	Clicks on advertisements week 4
Advertisement 1	264	246
Advertisement 2	38	46
Advertisement 3	351	228
Advertisement 4	43	4
Advertisement 5	197	168
Advertisement 6	172	133

Can you get high on banana skin? Find out on the web page at www.xxx.no Click here!

Figure 1. Example of advertisement made for the case organization

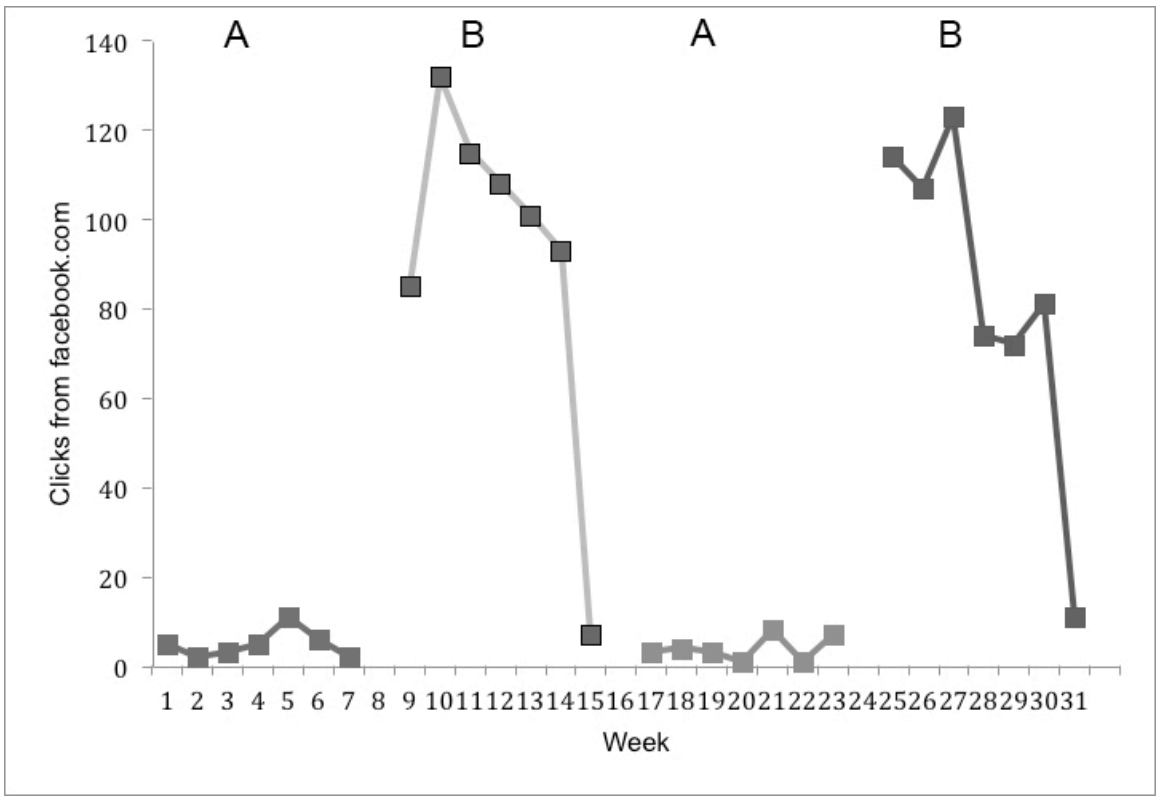

Figure 2. Clicks from facebook.com to website of case organization in week 1, 2, 3 and 4

Appendix A

Advertisements published on Facebook

Advertisement	**Text in the advertisement**
Advertisement 1 	Can you get high on banana skin? Find out on the web page at www.xxx.no Click here!
Advertisement 2 	Can't you limit yourself when you first start drinking? Chat with us at www.xxx.no
Advertisement 3 	When should you stop? You can get help to calculate your blood-alcohol level at RUStelefonen. Click here!
Advertisement 4 	Do you have questions about drugs? Ask us at www.xxx.no Click here!

Advertisement 5 	Worried about your friend who drinks a lot? Get tips on how you can help. Click here!
Advertisement 6 	Research shows that cannabis has more effects than you might think. Chat with us!

Appendix B

Interview guide focus groups

Purpose: Assess the use of social media among young people aged 15-20 years and the extent to which they acquire information about drugs / substances through social media.

Introduction

Presentation

Account for the purpose of and RUStelefonen

Account for focus group members and significance

Presentation Round of focus group

Use of social media

Which social media do you use most?

How often are you loggen on social media during the day?

What information do you apply for social media?

Which areas do you think social media is useful to you in your everyday life?

What do you emphasize to follow a page on Facebook?

Is there anything you find difficult with the advent of social media?

Information about substance abuse

What channels for information on drugs / substances are you using?

- Personal sources (friends, parents, etc.)
- Government sources (TV program, school, public organizations, etc.)

What channels for information would you prefer to ask questions about drugs?

Do you get information about drug use through social media?

RUStelefonen and social media

What do you associate with RUStelefonen?

Have you seen RUStelefonen on social media?

What information do you want to find at the social media channels of RUStelefonen?

Are there other things you want to add?