How does the degree of anonymity affect our morals?

A study examining behavioural changes in online communication

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Hur påverkar graden av anonymitet vår moral?

En studie som undersöker beteendeförändringar vid kommunikation online

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ABSTRACT

Humans have found ways to communicate with each other since the beginning of time. However, the way we communicate has changed over the years. Today we can communicate with people from all over the world by employing digital technologies, and this can sometimes be done without revealing individuals' actual identity. With anonymity comes many problems, such as a lack of responsibility, the feelings of other people seem to be valued lower in an online setting than in the real world, and there are often no consequences for those who behave badly or unethically. This study investigates how our morals correlate with our degree of anonymity while we communicate in an online setting. To achieve the study's goal, a social experiment, where participants had the choice to act either altruistic or selfish, was performed. The social experiment was in the form of an online competition and was conducted under two different conditions. In the first clause, the participants were completely anonymous and in the second, they were exposed with their full names and a picture with their face visible. The hypothesis for the study was that a higher level of anonymity reduces the feeling of responsibility, which causes a person to care less about her moral compass, and will therefore make more selfish choices. The results showed that this was not the case. A higher percentage chose the selfish option when presented with name and picture. However, the result also exhibited that the majority of the study participants felt a difference in their behaviour during the two clauses.

SAMMANFATTNING

Människor har hittat sätt att kommunicera med varandra så länge människor har funnits på jorden, men sättet vi kommunicerar på har förändrats över tid. De senaste decennierna har denna förändring skett på en helt ny nivå. Idag kan vi kommunicera med personer över hela världen, och detta utan att nödvändigtvis avslöja vår identitet. Med denna möjlighet till anonymitet kommer många problem, såsom en brist på ansvar för ens egna handlingar. Det är lätt att dela sina åsikter och att bete sig dåligt. I de fall där våra ideer och åsikter sårar en annan person, finns det sällan något som kräver att vi ska ta konsekvenserna för våra handlingar. Denna studie undersökte om det fanns ett samband mellan förändring i vår moral och vår grad av anonymitet. Detta gjordes genom ett socialt experiment där deltagarna fick möjligheten att vara givmilda eller själviska. Det sociala experimentet skedde i form av en tävling online, två matcher under två olika förutsättningar. I den första matchen var deltagarna helt anonyma och i den andra var de presenterade med fullständigt namn och profilbild med synligt ansikte. Hypotesen för studien var att en högre grad av anonymitet minskar känslan av ansvar, vilket i sin tur får personen att ta mer själviska beslut. Resultatet från det sociala experimentet visade att så inte var fallet. En högre procent av deltagarna valde det själviska alternativet när de var presenterade med namn och bild. Resultaten visade dock även att en majoritet av deltagarna kände sig påverkade av sin grad av anonymitet, men inte tillräckligt för att det skulle påverka deras beslut.

Keywords
Anonymity; Morals; Deindividuation; Social Experiment; Online Communication;

1. INTRODUCTION

1.1 Purpose

The purpose of this study is to investigate how people's morals change depending on their level of anonymity. Being anonymous is these days often connected with being online. On the Internet, it is easy to present yourself with a fake name or a pseudonym. However, being anonymous can create a feeling of deindividuation, which is when a person loses their sense of identity. This feeling can cause people to take less responsibility for their actions. It is not a necessity to reflect over morals when communicating anonymously online, since we do not have to take consequences for what we say in a case where we hurt someone. An example of such a situation is a conversation taking place on the discussion forum Reddit[20]. There, people all around the world can talk anonymously to each other. The global Internet usage has increased tremendously the last decade. According to the World Bank 50% of the global population used the Internet in 2017 [15]. Thus, more of our everyday conversations are taking place online, especially in the light of the still ongoing COVID-19 pandemic worldwide. This study investigates how people's morals change between two different states: 1. fully anonymous online and 2. presented with full name and profile picture online.

1.2 Online communication and morals

When a person interacts with an anonymous account, they have in general a higher probability to act unethically [3]. The reason for this is that they are not as emotionally and mentally committed to the other person. Thus, they most likely do not feel a need to act ethically. Unethical behavior can appear on many different levels, ranging from innocent teasing, which is common between individuals playing video games[4], to straight up threats and harassment. An example is the Internet's response to a 17 year old girl who got brutally murdered. On different discussion forums online many posts were disrespecting the tragedy and straight out made fun of her death [16]. But why do people tend to act this badly when online? Would a person that acts unethically do the same things if they were standing face to face with the victim? According to previous studies, people who are subject to cyber bullying leap twice the risk of committing suicide [1]. How are these online roles really affected by being able to hide behind their screens and avoid the consequences of their online actions?

1.3 Hypothesis

In this study, we hypothesize that a higher level of anonymity reduces the feeling of responsibility, which causes a person to care less about her moral compass, and will therefore make more selfish choices.

1.4 Research question

This study aims to answer the following research question:

How does a person's morals, that is, their choice of actions, differ when they are communicating identifiable online and anonymous online?

2. BACKGROUND

This section starts with the presentation of key concepts used in this study, followed by the presentation of previous research results related to this study.

2.2 Definitions

2.1.1 Morals

A person's morals refers to personal guiding principles, driven by the desire to be good. Morals are based on internal influences, and are often shaped by the person's surrounding environment, or their belief system [6].

2.1.2 Ethics

A person's ethics come from external influences, and are much more practical compared to morals. An ethical code is a set of rules to follow, and does not necessarily have anything to do with right or wrong [6].

2.1.3 Deindividuation

Deindividuation is a psychological concept that describes a state when a person loses their sense of identity. It can appear when a person is being a part of a large group, such as a mob, since the size of the group diffuses the feeling of having a responsibility. It can also be because the person is anonymous, and their actions can not be tracked back to them [7].

2.1.4 Anonymous

A person is anonymous when they are fully unidentifiable, including both name and physical appearance [9].

2.1.5 The Real World

The real world refers to the physical materialistic world, in contrast to the electronic world [8]. It is not used to imply that cyberspace would be any less significant or "real", but rather a way to easily distinguish between the two worlds when referenced in the text.

2.2 Related work

2.2.1 Early studies on anonymity

In 1969 the American psychologist Philip Zimbardo conducted a study on how anonymity affected deindividuation. The participants were women from *New York University* divided in groups of four. Some of the groups were dressed up as Ku Klux Klan members, with their identities fully hidden, and the others were wearing normal clothes and name tags. Their task was to give another person electric shocks at different levels of electricity, ranging from mild to dangerous. The electric shocks were however not real, something that the participants were not aware of. The conclusion from this experiment was that the participants who were anonymous gave their confederates electric shocks during a longer time, compared to those who were non-anonymous. Zimbardo later performed another study, with the same type of experiment, but where the participants were male soldiers. This experiment got the opposite result. The soldiers who were anonymous shocked their confederate for a shorter period of time. A result that Zimbardo in his studies explains as a possible effect from the soldiers losing their sense of group affiliation, and therefore feeling isolated from each other, when anonymous [10].

Another similar experiment was conducted in 1976 by the American psychologist Edward Diener. The experiment was made on Halloween with over 1,300 trick-or-treating children as participants. The children were told in the door that they were allowed to take one single piece of candy from a bowl, and were then left alone in the room, with the opportunity to steal both candy and money. In some of the cases the host asked about the childrens name, parents name and where they lived, and in other cases no attempt was made to know anything about the child's identity. What affected how many of the children that broke the rule was both their level of anonymity and if they came in a group or not. For children who came alone 21.4% broke the rules if they were anonymous, and only 7.5% if they had to say their name and where they lived. For the children who came in groups 57.2% broke the rules if they were anonymous, and 20.8% if not. In other words, anonymity increased the transgression by 14% for children who came alone, and by 36% for children who came in groups. In the discussion Diener concludes that "although anonymity did seem to have a weak but non-significant effect on alone individuals, anonymity for group members produced a large effect. Anonymity by itself may release some antisocial behavior because it reduces fear of apprehension. But when anonymity occurs in a group, it may have additional effects, such as fostering deindividuation." [11, p.181].

2.2.2 The impact of anonymity in cyberspace

Many studies have examined how anonymity affects our behavior online. In one study 256 participants were presented with opinions that were either similar or dissimilar to their own. To see how anonymity affected how they handled people disagreeing with their own opinions. In the conclusion it was established that only the people with high self-esteem, high level of autonomy or low levels of social anxiousness voiced harsher opinions when anonymous [12]. In another recent study, the focus was on individuals' aggressive behaviour in online gaming. The study supported the hypothesis that we tend to find aggressive behavior more acceptable when it occurs online, compared to the real world. It also partly supported the hypothesis that there is a link between normalising agressive online behaviour and age and gender, where being young and male had a higher representation than others [4].

But the reason for why people behave badly online could derive from many other things than just pure anonymity. An earlier study focused not only on anonymity but also on the concept of invisibility and a lack of eye-contact. The results showed that it was not anonymity, but the lack of eye-contact that had the biggest effect on people's behavior. The researchers behind the study therefore employed a new concept called *Online Sense of Unidentifiability*, which is broader than just being anonymous, since it also includes invisibility and lack of eye-contact [13].

2.2.3 Anonymity and morals

Many studies about how anonymity affects our ethics and morals have also been conducted. In one study, the participants were presented with an ethical dilemma [14]. In the study, the "appropriate" thing to do was defined as the most utilitarian. Some of the participants were presented with the dilemma in an anonymous internet context, and others in a social non-anonymous context. The results of the study showed, in contradistinction to some of the previous studies, that people tend to make "appropriate" decisions when anonymous and "inappropriate" decisions when not. This might be because people's emotions play a bigger role when we are in a social and non-anonymous context [14].

Another similar study focuses on how our ethics are affected based on whether the person on the other side, the victim, is anonymous or not [3]. Three experiments were made, where the participants were faced with a dilemma. The participants were in one of the experiments titled the dictator in a chat with another member. In some of the cases the other member was presented with a name, and in others only with a number. The dictator then had to decide how they would split $.10. Giving the other person less than 50% was considered unethical behaviour. The participants with an anonymous victim gave on average 26% of the total amount and the participants with an identifiable victim gave on average 37% of the total amount. This study supports the hypothesis that people act more unethical, and feel less guilt, when the victim is anonymous [3].

3.   METHOD

To be able to investigate how people's morals change in different settings a *social experiment* was conducted. A social experiment compares the outcome of different groups of individuals, who have to complete the same task, but under different circumstances. Unlike experiments conducted in chemistry or biology, one of the main factors here is the participant's own point of view and knowledge [18]. In this study, the social experiment consisted of a game where the participants collected points by collaborating with others. The goal was to see if the different degrees of anonymity affected the behavior of the participants.

3.1 Setup

The game was divided into two clauses, 1. anonymous online and 2. identifiable online. Every participant played the game two times, in the two different circumstances and with two different teams. The clauses took place in a text-based chat application that was designed for the purposes of this study (see Section 4. Prototype).

In each setting, the two teams, consisting of three people each, competed for the prize of 100 points. The teams had to choose between a red and a blue card. The blue card represented the altruistic option, and the red card the selfish option. They had some time to discuss within the team, and then had to make a mutual decision. If one team chose the red card and the other team - the blue card; the red-card-team got all the points. If both teams chose the blue card, they split the points evenly. If both teams chose the red card; no points were earned for either of them. The participants then got to keep their earned points to the next round, where they were paired up with two new team members. In the end, the participant with the most points won. The prize was a 200 SEK gift card at a store of their choice.

3.1.1 Clause 1 - anonymous online

In the first clause, the two teams communicated completely anonymously through the provided chat application. The individuals had no information about who the other people were, not in their own team nor in the opposing team. The participants were provided with a fake name and an anonymous picture to mimic anonymous accounts.

3.1.1 Clause 2 - identifiable online

The second clause was executed in the same chat application as the first, but this time each participant was presented with their full name and a profile picture with their face clearly visible. This mimicked discussion on social media platforms such as Facebook, Instagram and YouTube.

3.2 Data collection

3.2.1 Results from the game

Data regarding which card each team selected in each clause was stored in the database connected to the prototype.

3.2.2 Online chat history

The chat history from each game session was saved as a text file directly from the chat application.

3.2.3 Responses from survey after the game

Data was collected through a survey that every participant was asked to fill in after the two game sessions. The purpose of the survey was to better understand how the participants reasoned when making their decisions during the game sessions. Firstly, they had to answer the following question:

-    Did you experience any change in your behaviour during the two game sessions? If 'yes', explain what the reason/s for this was.

Secondly, the form contained the three statements;

1. I was more concerned about making a good impression on my teammates when I was presented with name and picture.
2. I cared more about what my teammates had to say when we were all presented with names and pictures.
3. I cared more about the opposing team when we were all presented with names and pictures.

The contestants could then rate every statement from 1 to 5 where 1 represented "I do not agree at all" and 5 "I fully agree".

3.3 Data analysis - setup

3.3.1 Statistic analysis

To test if there was a statistical difference between the different clauses a t-test was performed on the results of the different statements. This was made to test the hypothesis that one's level of anonymity affects how that person feels about themselves, their teammates and the people in the opposing team.

3.3.1 Semantic analysis

The chat history from all game sessions was analysed through a semantic text analysis. A semantic analysis is a linguistic tool that can be used to determine the tone of a text. This was done with the website *Gavagai.io* that specialises in evaluating and extract subjective information from a given text [17].

3.4 Limitations

The basis of this study is anonymity, which makes it vulnerable to personal information leaking out. All the participants that took part in the study came from the same program at the same school, making it very hard to control what is said between participants that know each other. We tried to minimize the potential 'damage' by clearly stating that the participants were not supposed to talk about the game they had played until after the study was over. The participants were also misled to believe that only a small percentage of all the study's participants came from their program.

Another problem was if participants that knew each other were in the same game session, and could see their friends' name in their own or the opposing team. This was solved by giving the participants a fake name and a fake profile picture. Something the participants were not aware of, since the application was built in a way that led them to believe they were presented with their actual name and picture.

4. PROTOTYPE

To conduct the social experiment a chat application was built. For the first clause, consisting of fully anonymous participants, several existing websites could have been used. When it came to the second clause, where one of the main functionalities was the fake opposing team, none of the existing websites provided this option. Therefore a web-based application was developed specifically for this study. This also created the opportunity to easily save data, such as the chat history, directly from the connected database. To develop the web application *HTML*, *CSS*, *JavaScript* and *React* was used to create the website with all its associated functionality, and *Firebase* was used in order to send and store the chat messages.

4.1 Application sections

The application consisted of three pages: the login page (Image 1), the actual chat (Image 2) and the result page (Image 10).
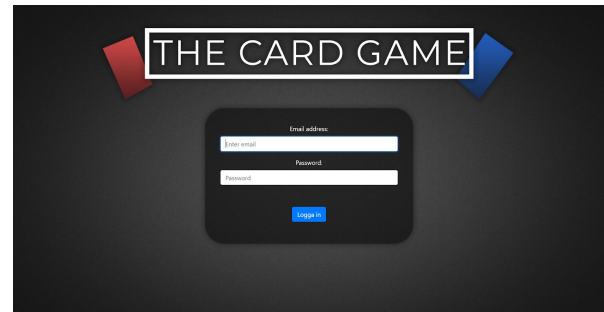
4.1.1 Login page

Image 1. Login page.

Each participant could log in to the chat application with their email and a unique password, provided prior to their game session.
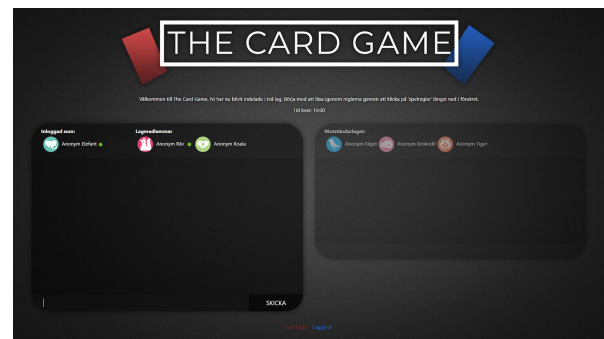
4.1.2 Chat page

Image 2. Chat page.

The Chat page (Image 2) was the main page for the social experiment. This is where they were presented with the game rules, where they could communicate with each other, see the chat activity of the opposing team and finally; selecting what card option to go with.

In order to enhance the communication between the teammates, each person had a green dot next to their name indicating that they were logged in (Image 3 and 4).
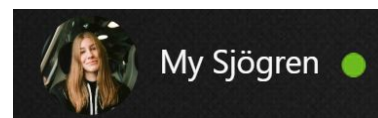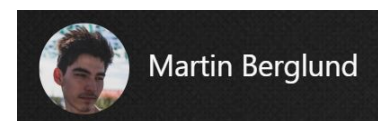

Image 3. Online user.

Image 4. Offline user

The participants in this study were all from the same program at the same school. To prevent eventual relations from affecting their behavior all the profiles presented to them were faked. A

participant could see their own name and profile picture accurately displayed under the "logged in as" header (Image 5), but their name and image was replaced with a faked profile when viewed from another account. If someone in the chat were to refer to a team member with their name, this would also be distorted, allowing the conversation to go smoothly.

The same fake profiles were used for all game sessions during the identifiable-clause (Image 6). Every participant thought they were teamed up with "My Sjögren" and "Martin Berglund", but My's and Martin's names were randomly generated, and their images were taken from the free online picture bank *Unsplash* [19].

Image 5. Logged in user.

To minimize technological errors, the social experiment was conducted with one team at a time. However, the team present in the experiment was led to believe there was another team taking part in the test at the same time, since their morals were evaluated in relation to an opposing team. This was solved by faking a conversation, consisting of empty messages sent within the other team (Image 5). The length and frequency of the fake messages were following an algorithm based on the normal distribution, this to make it look as realistic as possible.
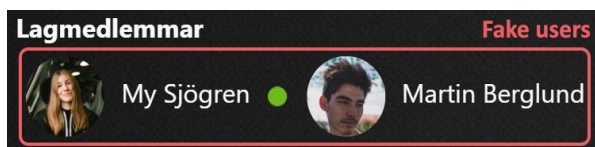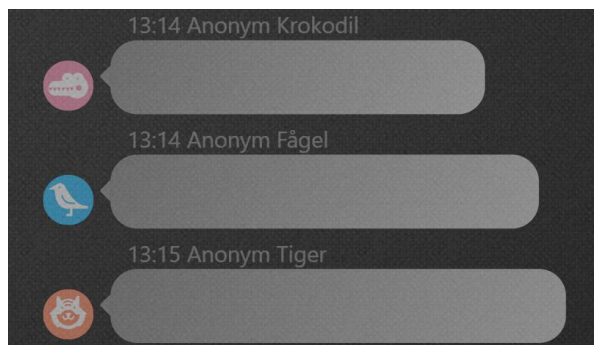

Image 6. Fake teammates.

Image 7. Fake messages within the opposing team.

When the team had discussed for seven minutes a message appeared in the chat, asking if the participants were ready to choose a card (Image 8). If a majority of the participants answered yes, a new component (Image 9) showed up, where they could reveal their choice of card.
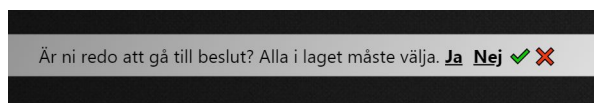

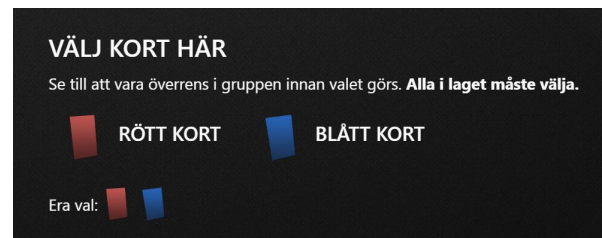**Image 8. Admin message to participants.**

Image 9. Card selection component.

The participants were encouraged to thoughtfully discuss what card to choose, to be able to make a mutual decision. But in the case where the participants did not manage to make a unanimous decision, the majority decided.
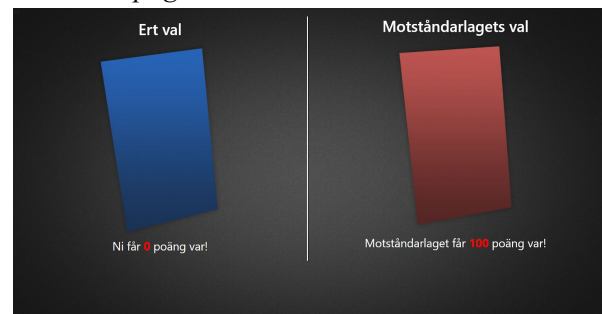
4.1.3 Result page

Image 10. Result page.

After the game was finished, the participants were presented with the result page (Image 10). If this was their second game session, the page also contained a link which directed them to the survey.

When it was time for each participant to take part in the study, they first logged in to the application. When all other participant in that group had logged in, a timer started to count down from ten minutes. The teammates could discuss freely about which card to choose until seven minutes had passed. Then, as mentioned above, a message appeared in the chat, asking if the participants were ready to choose a card (Image 8). If all the participants were ready, they would choose a card and move on to the result page. If they were not ready to choose, they had the possibility to talk for three more minutes. Then, when a total of ten minutes had passed, a new component showed up (Image 9) where they would choose card. Lastly, they were taken to a result page (Image 10) where they could see what card each team chose.

The participants did not take part in more than one clause a day, but did both clauses within a week.

5. RESULT

In this section we will present the results from the study. The data was obtained in two different ways, through the result from the game sessions and through the form they filled in afterwards.

Participants

25 people participated in the study, 12 females and 13 males. All students of the course *DM1578 Program Integrating Course in Media Technology* at *KTH Royal Institute of Technology*. The teams consisted of either three or four people. There were nine game sessions in clause 1 and eight - in clause 2. Clause 1 had one more since some people missed their scheduled game time so we had to arrange an extra game session.

5.1 Actions taken: Results from the games

5.1.1 Clause 1 Anonymous Online

In the first clause, where all participants were fully anonymous, seven teams, which equals 78%, chose the more selfish option; the red card. Two teams, 22%, chose the less selfish option, the blue card.

5.1.2 Clause 2 - Identifiable Online

In the second clause - where the participants were identifiable with name and profile picture - all teams chose the more selfish option; the red card.

5.2 Semantic analysis of Chat History

With the help of the web application *Gavagai* [17], all of the chat messages produced in this study were analysed from a semantic point of view.

5.3.1 Anonymous Online

In the anonymous clause, a total of 136 messages were sent. The red card was mentioned 117% more frequently than the blue card (Figure 1).
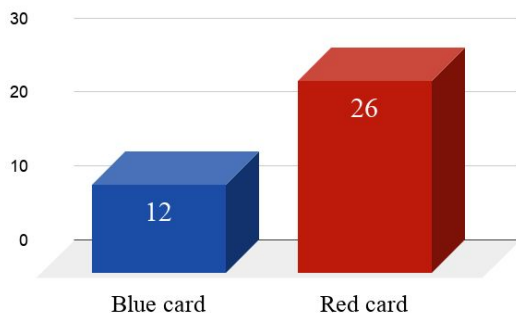

Figure 1. Number of mentions, anonymous clause.

19% of the messages sent regarding the red card were considered positive and 0% were considered negative (Figure 2).
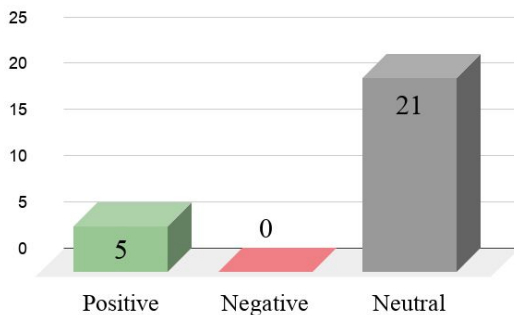

Figure 2. Sentiments for red card, anonymous clause.

25% of messages sent regarding the blue card were considered positive and 8% were considered negative (Figure 3).
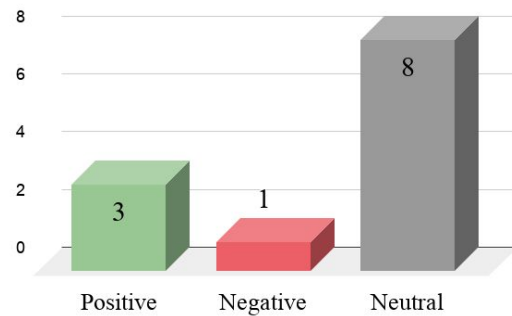

Figure 3. Sentiments for blue card, anonymous clause.

5.3.2 Identifiable Online

In the identifiable clause 198 messages were sent, and the red card was mentioned 96% more frequently than the blue card (Figure 4).
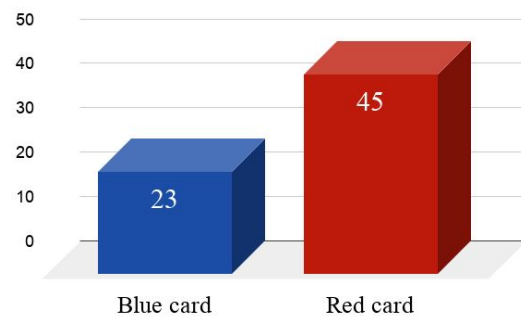

Figure 4. Number of mentions, identifiable clause.

11% of the messages regarding the red card were considered positive and 7% were considered negative (Figure 5).
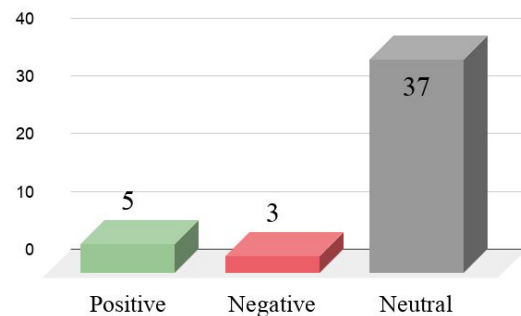

Figure 5. Sentiments for red card, identifiable clause.

17% of messages sent regarding the blue card were considered positive and 0% were considered negative (Figure 6).
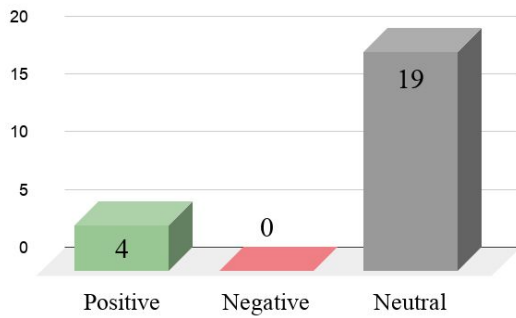
Figure 6. Sentiments for blue card, identifiable clause.

5.3 Thoughts after the game: Results from the survey

After the participants had played both versions of the game, they filled in a short survey, consisting of one question and three statements. The aim was to give the participants a chance to explain how they felt while playing.

5.2.1 Result from the survey question

- Did you experience any change in your behaviour during the two game sessions? If 'yes', explain what the reason/s for this was.

The result showed that a majority of the participants felt like they did act differently during their two game sessions (Figure 7).
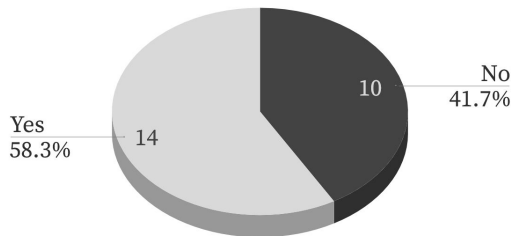

Figure 7. Result to the question "Did you experience any change in your behaviour during the two game sessions?".

The participant explained their change in behavior for several reasons. Some of them believed that anonymity made them more outgoing and talkative in the group chat, and others felt like they had a stronger urge to win the second time. One of them stated that they had outside distractions during one of the game sessions. Most of them also agreed that these factors did not affect what card they actually chose in the end.

Some of the comments from those who answered 'yes' included:

"Yes, I discovered that **I was more extroverted when I was anonymous,** and more straightforward. I suspected that the other players were bots. In the second round I became more thoughtful and assumed that the others were real people." (R2)

"My teammates were greedy and competitive in both the first and second round, so in the second round **I just played along** and was the same. You could say that my innocence was destroyed in the first round and I joined the dark side." (R5)

"When it comes to anonymity, I feel that what makes a big difference is whether you know the other players not. When it comes to people you do not know anonymity makes no big difference. But if it was people you know it feels like it might have made some difference" (R6)

"I acted differently during the two matches, but not because I saw who was in the opposing team. We chose the red card in the last round because it was the last, and we thought 'Go big or go home'."(R13)

"I felt that I was more concerned about the others in my team when we were all anonymous."(R14)

"[I acted] A little different when I was not anonymous, I was more open to choosing blue. Probably because **I didn't care so much** about the prize and thought it was fun if someone got to win. Spread some joy haha"(R19)

"Yes, but it **didn't affect** how I played the game. But think it may have affected how I wrote to my teammates"(R20)

"Yes, even if the choice was the same, I thought and reasoned slightly differently. I think it was mainly because **I had a better idea of how the game went** (I was prepared for how it could go)"(R22)

5.2.2 Results from the survey statements

The survey contained three statements, investigating how the participants felt during the two clauses. They rated the statements with a number between one and five. Where 1 equaled "I do not agree at all" and 5 "I fully agree". The hypothesis to be tested is that our level of anonymity does affect how we feel about ourselves, our teammates and the people in the opposing team.

For the hypothesis to be true a majority of the participants should have chosen a number that clearly indicates that they felt affected. Numbers three, four and five represent that, since two mean that they barely felt affected, and one that they did not agree with the statement at all.

To test the hypothesis a t-test at a 5% significance level was made for each one of the statements. The null hypothesis was that the mean value was equal to 2,5 and the alternative hypothesis that the mean value was greater than 2,5. In other words: that a majority of the people clearly felt affected by their level of anonymity.

Statement 1

1. I was more concerned about making a good impression on my teammates when I was presented with my name and picture.
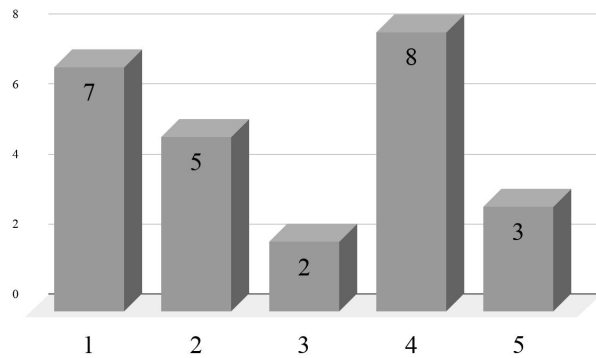
Figure 8. Response distribution for statement 1 where 1 equals "I do not agree at all" and 5 "I fully agree".

The responses to the first statement had a mean value of 2.8 and a standard deviation of 1.47. The variation in answer is also visible in the diagram in *Figure 8*. The result is incoherent and differs a lot between the different individuals. The t-value for the test equals 1.02 and the p-value 0.16. Since the p-value is greater than the significance level 0.05 the null hypothesis is accepted. In other words: the participants average feeling towards the first statement is considered to be less than or equal to 2,5. It is *not* statistically significant to claim that the participants were more concerned about making a good impression on their teammates when they were presented with their name and picture.

Statement 2

2. I cared more about what my teammates had to say when we were all presented with names and pictures.
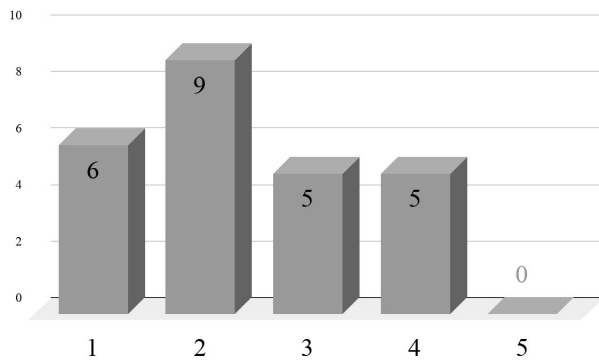

Figure 9. Response distribution for statement 2 where 1 equals "I do not agree at all" and 5 "I fully agree".

The responses to the second statement had a mean value of 2.36 and a standard deviation of 1.08 (Figure 9). The t-value equaled -0.65 and the p-value 0.74. Since the p-value is greater than the significance level 0.05 the null hypothesis is accepted in this test as well. It is not statistically significant to claim that the participants cared more about what their teammates had to say when presented with names and pictures. The participants average feeling towards the second statement is considered to be less than or equal to 2.5.

Statement 3

3. I cared more about the opposing team when we were all presented with names and pictures.
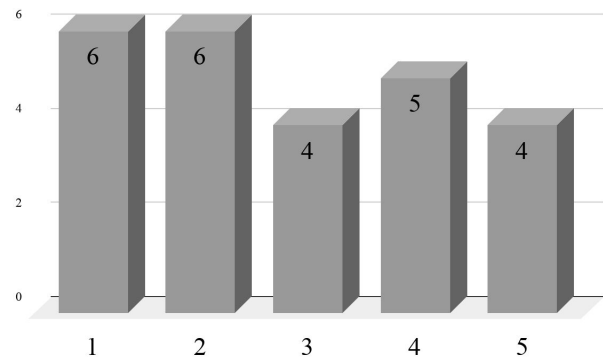

Figure 10. Response distribution for statement 3 where 1 equals "I do not agree at all" and 5 "I fully agree".

The responses to the third statement had a mean value of 2.8 and a standard deviation of 1.44 (Figure 10). The t-value equaled 1.04 and the p-value 0.15 which means that we once again can not reject the null hypothesis at our 5% significance level. The participants average feeling towards the third statement is considered to be less than or equal to 2.5. It is not statistically significant to claim that the participants cared more about their opposing team when they were all presented with names and pictures.

The null hypothesis is not rejected for any of the three statements so the alternative hypothesis can not be strengthened. It is not statistically significant to say that a majority of the participants felt affected by their level of anonymity. If the null hypothesis was rejected the risk of a type 1 error, which is: rejecting a correct null hypothesis, would be too high. With a risk at 15,9%, 74,0% and 15,4% for the different statements. The null hypothesis must therefore be accepted.

6. DISCUSSION

In this section the results of the study are discussed and analysed. This section also includes a critical discussion of the method used.

6.1 Analysis of Game Result

At first, the result from the game sessions seems to be very clear. The selfish option, the red card, was chosen with a majority of 78% in the anonymous clause and with 100% in the identifiable clause. One could therefore argue that people's morals do not change for the better when anonymous. But analysing question 1 from the survey, "did you experience any change in your behaviour during the two game sessions?", gives us a more nuanced outcome. It is clear that a majority, 58% did feel different during the two game sessions, but clearly not enough for them to change their choice of card.

One participant stated that "My teammates were greedy and competitive in both the first and second round, so in the second round I just played along" (R5). This participant was at first persistent to convince their teammates to go with the altruistic option, the blue card, but eventually gave up. The roles of the three participants were shaped early in the game, and even though

the three of them were all fully anonymous two of them quickly teamed up together, and even ignored some of the messages from the third member. One of these two participants stated in the survey that "I was more extroverted when I was anonymous, and more straightforward" (R2). What determines which participant gets which role, could be due to several factors, one of them is the person's self-esteem. Earlier studies have stated that it was people with high self-esteem, high level of autonomy or low levels of social anxiousness that voiced harsher opinions when anonymous [12].

The behavior of overruling and teaming up within the team was not as visible in the identifiable clause. "In the second round I became more thoughtful and assumed that the others were real people" (R2). The participants seemed to be very affected by the other people in the chat, which corresponds to what is stated in earlier studies; "anonymity can have weak but non-significant effects on individual level, but is often more visible when applied to whole groups. Anonymity by itself may release some antisocial behavior because it reduces fear of apprehension. But when anonymity occurs in a group, it may have additional effects, such as fostering deindividuation." [11, p.181].

The replies to question one in the survey implies that other factors than the level of anonymity affected what card they chose. "I acted differently during the two matches, but not because I saw who was in the opposing team. We chose the red card in the last round because it was the last, and we thought 'Go big or go home'."(R13). This person won their first game session, which probably affected them to go hard in the second session as well. The outcome of the first game affected their behavior more than their level of anonymity. Another participant said that "[I acted] A little different when I was *not* anonymous, I was more open to choosing blue. Probably because I didn't care so much about the prize and thought it was fun if someone got to win"(R19). This could be since it was the person's second, and last, game session, and they had lost their first game. They had therefore probably given up the chance to win the whole thing.

6.2 Discussion of semantic analysis

The same number of people participated in the two different clauses. There were nine game sessions in the anonymous clause, and eight in the identifiable clause. The total number of messages sent was 136 in the anonymous clause and 198 in the identifiable - an increase of 46%. The participants clearly felt more responsible for contributing to the conversation when being identifiable.

Comparing the frequencies of mentions between the red and blue card shows that the relation between them did not change (Figure 4, 5). This reinforces the fact that most people preferred the red card, over the blue, in both of the clauses. However, in general, people wrote more negatively about the red card when they were identifiable online (Figure 6, 7). This result indicates that people want to be considered more generous when identifiable online compared to when being fully anonymous.

The sentiment analysis for the blue card (Figure 8, 9) also indicates that people acted more generously when being identifiable online. A majority of the participants answered that the degree of anonymity didn't change which card they wanted to choose. Nevertheless, none of the participants spoke negatively of the blue card in the identifiable clause, compared to 8% in the anonymous clause. This indicates that they spoke more freely when being completely anonymous and were more thoughtful

with what to say when identifiable, even if this did not affect what card was actually chosen in the end.

6.3 Analysis of Survey Responses

The first statement in the survey, "I was more concerned about making a good impression on my teammates when I was presented with my name and picture", measured how much the participants cared about presenting themselves in a good way. Even though it is not statistically significant to claim that there was a difference between the two clauses, the high standard deviation shows that the participants had very different opinions about this. It varied a lot on an individual level. Anonymity affects us all differently, some felt more isolated when anonymous. These participants did not participate that much in the discussion and in the decision making, just as the earlier study with soldiers in an electric shock experiment. There, the soldiers felt isolated from each other when anonymous, compared to when identifiable, and therefore acted in a more altruistic way [10]. At the same time, some participants were more outgoing when anonymous, and seemed to have an easier time to raise their opinions. These same participants acted more thoughtful and listened more to their teammates in the identifiable clause. This might be because people's emotions play a bigger role when we are in a social and non-anonymous context [14].

The responses to the second statement, "I cared more about what my teammates had to say when presented with names and pictures" is not statistically significant, nor are the responses to the third statement "I cared more about the opposing team when we were all presented with names and pictures". Previous studies have shown both that when people interact with an anonymous person, they have a higher probability to act in unethical ways and that people act more unethically, and feel less guilt, when the victim is anonymous [3]. This is however not as visible in this study. Is it the difference in the type of participants or the execution of the test that caused the difference? Even though 52% of the participants were males, and there is a link between normalising agressive online behaviour being young and male [4], there is one other important aspect to take into consideration. One of the participants stated that their behavior was different during the two game sessions, but not necessarily due to level of anonymity, but rather whether they knew the other participants or not. "When it comes to anonymity, I feel that what makes a big difference is whether you know the other players not. When it comes to people you do not know anonymity makes no big difference" (R6). Given this comment, and the results from the games, with such a big majority of the selfish option in both cases, it seems like there is not such a big difference between the two clauses.

The feeling of deindividuation and anonymity seems to be present in both clauses. Maybe our name and picture is not enough for us to feel fully identifiable. An earlier study stated that it was the lack of eye-contact, and not the level of anonymity, that affected people's behaviour the most, where the concept called *Online Sense of Unidentifiability* was defined. A state that is broader than just being anonymous, since it also includes invisibility and lack of eye-contact [13]. The *Online Sense of Unidentifiability* was nearly the same in both settings. It is therefore hard to state exactly when a participant's sense of identifiability starts. Maybe we need to meet in the real world, to fully lose our feeling of anonymity. According to the results from this study most of us

still feel rather anonymous, as long as we can hide behind a screen.

6.4 Method criticism

In general, the social experiment unfolded accordingly to the plan, but there are things that could have been done differently for more authentic results. If each team at each game session played the game several times, instead of once, the participants would be able to acquire a feeling of the other team's thinking and therefore also investigate their own morals to a higher extent. This would also create more data to be analysed, and therefore give more secure results, especially in the statistical analysis. If the opposing team was not fake, then the participant might have acted differently. A vast majority of the participants did not mention any suspicions about the other team being fake. However, they might have experienced that the other teams messages were not reasonable which made them think in terms they would not have done otherwise. For example, some of the participants mentioned that the other team wrote an unreasonable amount of messages, which made them skeptical about their decision.

In this study 25 students participated, all from the same school and program. While this is not too few to draw conclusions about the social experiment, the results of this study would have been more trustworthy if at least 100 participants from different backgrounds took part. Another good extension would be a third test group, where the participants had to play the game in the real world. This would greatly help with drawing conclusions from the results. Such a clause was planned, but never executed due to the circumstances during Covid-19.

6.5 Future research

The main goal of this study was to observe how one's behaviour changes when the degree of anonymity changes. To do that the participants were placed in an environment where they had a goal, namely to get as many points as possible while at the same time stealing points from the opposing team. To better understand how our morals change with the degree of anonymity, a focus more directed towards meaningful conversation would be preferable. An example of such a study could be to observe changes in behaviour when two people have a deeper, more meaningful conversation about things they care about. Alternatively, letting people debate about a topic they both strongly disagree on. In such an environment, a more qualitative analysis could be made on the conversation.

7.   CONCLUSION

The goal of this study was to answer the question *How does a person's morals, that is, their choice of actions, differ when they are communicating identifiable online and anonymous online?* With the hypothesis that a higher level of anonymity reduces the feeling of responsibility, which causes a person to care less about their moral compass, and therefore make more selfish choices. The obtained result suggests that the hypothesis is incorrect. There is no statistical significance in claiming that the participant's acting was more selfish when anonymous. However, it does suggest that the participants' thought processes differed a lot during the two game sessions, and it affected how they talked to each other. People did care more about how they presented themselves when identifiable, but it did not affect their choice of card. Moreover, this study showed that people still probably feel rather anonymous even when they are shown with their name and profile picture. From this study, we can conclude that people's morals do not change between the two states; fully anonymous online and presented with name and picture online.

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