

UNIVERSITY OF CANTERBURY

# **Can That Donkey at the Poker Table Increase Prejudice? Investigating the Effects of Negative vs. Positive Vicarious Contact on Outgroup Attitudes**

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### **Abstract**

Online poker has grown into a multibillion dollar industry, but unlike in live poker, other players do not display physical cues; in fact the only information readily available is other players' nationality. This provides a unique opportunity to examine how intergroup attitudes can be influenced by social interactions during a game. To do so, I examined how vicariously watching negative, positive, or neutral contact between an ingroup and outgroup member at an online poker table affects ingroup and outgroup attitudes, trust, and perceived group variability. One hundred New Zealand based participants watched a video of actual online poker hands being played between a New Zealand (ingroup) and Russian (outgroup) player. Participants either saw positive, negative, or neutral contact occur between the players. Although there were no overall differences in outgroup attitudes, trust, or perceived group variability towards Russians, there was evidence of intergroup attitudes and trust when considering attitudes and trust toward Russians relative to New Zealanders. These findings suggest that merely watching positive or negative online poker interactions can affect intergroup attitudes and trust.

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### **Can That Donkey at the Poker Table Increase Prejudice? Investigating the Effects of Negative vs. Positive Vicarious Contact on Outgroup Attitudes**

Since the emergence of the first online poker room Planet Poker in 1998 (Philander & Abarbanel, 2014), online poker has evolved into a multibillion dollar industry, which in 2013 garnered an estimated €2.8 billion in gross profit (Potter van Loon, van den Assem, & van Dolder, 2014). These numbers remain high despite a large drop in online poker players (mainly Americans) after action taken by the United States Congress in 2006 and United States Federal Government in 2011 that deemed money transfers to and from banks and financial institutions within the US to online gambling businesses illegal (Lang, 2014; O'Leary & Carroll, 2013; Potter van Loon et al., 2014). The largest internet poker operator PokerStars has purportedly registered over 100 million players since its inception in 2001 (PokerStars, 2016), although after the 2011 indictment, traffic to the PokerStars website fell by 26 percent (Stewart, 2011). Nevertheless, each day hundreds and thousands of players (Potter van Loon et al., 2014) from at least 85 different nations (Stewart, 2011) play online poker.

Interestingly, unlike the numerous cues and information one gets whilst playing live poker, the only information available about other players (other than usernames and playing style) are their respective nationalities (the country where they signed up for their user account). This information is available by either seeing the nationality of each player when choosing a poker table to sit at and/or when hovering over or right clicking a player's username. In other words, unlike face-to-face interactions or even communication through other online mediums, information about age, sex, appearance, and other characteristics are not available in online poker. This provides social psychologists with a unique opportunity to research intergroup relations using the already existing medium of online poker. The present research utilises this poker platform to experimentally test the impact of vicarious positive

and negative intergroup contact on intergroup attitudes, trust, and perceived group variability. As thousands of people each day use online poker venues and sometimes simply watch games at tables before they sit down to play at one, or choose to watch tables without playing, the present research examines how such indirect exposure to positive or negative interactions between players of different nationalities would influence intergroup attitudes, trust, and perceived variability.

### **Contact as a Means to Reduce Intergroup Conflict**

Intergroup conflict occurs when two or more groups compete for power, for example over resources or values (Coser, 1967). Conflict can manifest in stereotyping, prejudicial attitudes, or discrimination to more violent forms such as genocide (Fisher, 1994). One route, by which intergroup conflict can be reduced, is via intergroup contact (Pettigrew & Tropp, 2008; Al Ramiah & Hewstone, 2013). The contact hypothesis, first proposed by Gordon Allport (1954), stated that under certain conditions, contact with outgroup members should result in less prejudice toward outgroup members compared to those that do not have contact with outgroup members. According to Allport (1954), the conditions under which contact situations reduce prejudice are: equal status among the participants (e.g. background, wealth); intergroup cooperation; working towards a common goal; and the contact must have institutional support (Allport, 1954).

Since Allport's original contact hypothesis, scores of research studies have demonstrated the efficacy of direct contact (Dovidio, Eller, & Hewstone, 2011). For example, having friends from a minority outgroup can reduce levels of intergroup prejudice (Pettigrew & Tropp, 2008). A meta-analysis combining data from over 500 studies examining the relationship between direct contact and prejudice revealed that contact significantly reduces prejudice ( $r = -.22$ ; Pettigrew & Tropp, 2006). However, direct contact is not the only means

of contact that has been demonstrated to be effective at reducing prejudicial attitudes, stereotyping, and discriminating behaviour—indirect forms of contact have also been shown to be effective at reducing prejudice and intergroup conflict (Dovidio et al., 2011; Lemmer & Wagner, 2015). Indirect contact may encompass (a) vicarious contact: watching an ingroup member interact with an outgroup member (Mazziotta, Mummendey, Wright, 2011); (b) extended contact: knowledge that an ingroup member has direct contact/friendship with an outgroup member (Dovidio et al., 2011; Tausch, Hewstone, Schmid, Hughes, & Cairns, 2011); (c) imagined contact: imagining interacting with an outgroup member (Crisp & Turner, 2009); (d) virtual contact: virtual contact is where contact can be made via the internet (Yablon, & Katz, 2001), and (e) parasocial contact, which involves watching a media portrayal (e.g., television show) of intergroup contact (Schiappa, Gregg, & Hewes, 2005, 2006).

**Indirect Contact.** Over the last decade, there have been numerous studies demonstrating the efficacy of indirect contact. For example, Cooley and Burkholder (2011) conducted a study where participants engaged in vicarious contact with gays and lesbians by either watching a video about gay men and lesbians talking about their lives, or by watching the video and having direct contact with gay men and lesbians (those in the control group received no information relating to gay men or women). Compared to the control group, participants in both the video, and video plus direct contact conditions showed reduced negative attitudes towards gays and lesbians. There was also no difference in the attitudes between the two experimental groups, indicating that vicarious contact was just as effective at improving attitudes as having direct contact as well.

In the context of extended contact, a recent study showed that children and adolescents who identified more with the positive character “Harry” from the Harry Potter books (compared with those identifying with the villain Voldemort), had improved attitudes



towards stigmatized groups such as immigrants and homosexuals (Vezzali, Stathi, Giovannini, Capozza, & Trifiletti, 2014). Characters in the Harry Potter series often deal with issues such as discrimination and prejudice, albeit in a “wizarding” context (e.g. being bullied because they are not a full blood wizard; Vezzali et al., 2014), therefore, it was expected that identification with such a character would promote sensitivity toward stigmatized individuals.

Similarly, several studies have recently examined the efficacy of imagined contact. For example, participants that imagined having an interaction with a stigmatized outgroup member (an obese person or a Muslim) showed less social distancing behaviour, as measured by arranging a chair intended for a member of the target outgroup, closer to their own chair, when compared to those who were asked to imagine an interaction with an unspecified stranger (Turner & West, 2011). Although there has been some debate on the effectiveness of such a paradigm, (Bigler & Hughes, 2010; Lee & Jussim, 2010) a recent meta-analysis supports the effectiveness of the approach (Miles & Crisp, 2014).

Finally, another form of vicarious contact where participants watch televised contact portrayals is parasocial contact. In a correlational study on parasocial contact by Schiappa et al. (2006), participants that watched more of the TV show “Will and Grace” which featured gay characters, reported more favourable attitudes towards gay men compared to those that watched the show less or not at all. These findings have also been reproduced experimentally (Joyce & Harwood, 2012). Specifically, participants watched intergroup interactions between an illegal immigrant and a US citizen patrolling the border, manipulated in either a positive, negative, mixed, or control (about planet earth) video. Those that watched the positive interaction between the two characters reported less prejudicial attitudes compared to the negative and control conditions. However, there was no difference in prejudicial attitudes between the negative and control conditions.

### **Negative Contact and Increased Prejudice**

While previous research investigating the effects of intergroup contact has mainly focused on the outcome of positive contact (e.g. Pettigrew & Tropp, 2006), considering the effect of negative contact is imperative in order to gain a fuller picture on the effectiveness of intergroup contact (Graf, Paolini, & Rubin, 2014; Lolliot et al., 2014; Pettigrew, 2008). Indeed, researchers have started to investigate the effects of negative intergroup contact on outgroup attitudes and behaviour (Barlow et al., 2012; Graf et al., 2014; Paolini, et al., 2014). With the exception of a few studies (e.g. Joyce & Harwood, 2012), previous research on negative intergroup contact has largely utilized surveying participants (as opposed to experimentally manipulating contact valence) to ask how much positive and negative contact they have had with outgroup members (e.g. Barlow et al., 2012; Techakesari et al., 2015). For example, Barlow et al. (2012) revealed a positive-negative contact asymmetry, such that negative contact more strongly predicted hostile outgroup attitudes than positive contact predicted positive outgroup attitudes. Thus, any benefits from positive contact may be offset by less frequent, but more influential, negative contact experiences (Barlow et al., 2012). Prior research has also stipulated that negative intergroup contact (vs. positive contact) causes group memberships to become more salient (Paolini, Harwood, & Rubin, 2010), and greater salience will lead to more group generalizations than what positive contact elicits (Paolini et al., 2014).

Recently, Graf et al. (2014) proposed an explanation as to why prior meta-analyses on positive intergroup contact (e.g. Pettigrew & Tropp, 2006) concluded that positive contact reduces prejudicial attitudes when other research has demonstrated that negative intergroup contact can reverse beneficial effects of positive contact (Barlow et al., 2012; Paolini et al., 2014). They suggest that the sheer number of positive contact experiences greatly outnumber the amount of negative experiences. Thus, even though negative contact is more powerful in

influencing outgroup attitudes, the overall number of positive contact scenarios can buffer against increased prejudicial attitudes (Graf et al., 2014).

### **Computer Mediated Communication (CMC)**

Research on computer mediated communication (CMC) has found it to be a means to reduce (Alvidrez, Pineiro-Naval, Marcos-Ramos, & Rojas-Solis, 2015) and heighten (Hsueh, Yogeeswaran, & Malinen, 2015) prejudicial attitudes. For example, Alvidrez et al. (2015) conducted a study in Spain investigating stereotype-disconfirming (vs. confirming) behaviour in a CMC context involving virtual discussion groups. Researchers recruited ingroup (Spanish) students and got them to solve a puzzle task in a team with four Spanish students and one outgroup (Latin American) member. After the task, participants were paired with the Latin American confederate to discuss controversial societal issues in Spain. During the discussion the confederate displayed either stereotype confirming behaviour (e.g. being sociable, talking about God) or stereotype disconfirming behaviour (e.g. less sociable, bringing science into the discussion). Additionally, during the experiment, membership was either made salient or not salient to the participants by displaying their respective national flags. When participants were reminded of their identities (membership salient condition), disconfirming behaviour by the outgroup member reduced prejudicial attitudes towards the outgroup as a whole. However, stereotypical perceptions were not changed by a disconfirming outgroup member. While previous research in CMC has mainly utilized virtual contact contexts (e.g. Alvidrez et al., 2015; Hsueh et al., 2015), it remains to be investigated, what effects watching a series of negative, positive, or neutral interactions in an online poker context has on intergroup attitudes, trust, and perceived group variability.

### **Ingroup Love and Outgroup Hate**

It has been postulated that in order to truly understand intergroup relations, it is important to take into account ingroup favouritism and outgroup derogation (Ingroup love vs. outgroup hate; Brewer, 1999). Brewer (1999) stipulated that many instances of discrimination are probably the result of increasing and maintaining positive relationships within one's own ingroup as opposed to harming outgroup members. Experimental studies support this proposition. For example, utilizing paradigms where participants can express ingroup love by cooperating within their own group to maximise their group's monetary gains or expressing outgroup hate by playing competitively to sabotage outgroup members gains (at no loss to their ingroup), Halvey, Weisel and Bornstein (2012) found that even though participants could sabotage outgroup members' monetary gains, most opted not to; rather they chose to just maximise their ingroup's gains, thereby showing ingroup love.

A study with a similar paradigm albeit with positive resources (e.g. balloons) or negative resources (e.g. broken glass) instead of monetary rewards, was carried out on 6 and 8 year old children (Buttelmann & Böhm, 2014). The authors found similar results as the monetary gain paradigms even in children as young as 6 years, with a greater percentage of selfish outgroup derogation behaviours exhibited with the 8 year old children, indicating that ingroup favouritism occurs in children *before* outgroup derogation (Buttelmann & Böhm, 2014). Recent research has highlighted the need to look not just at attitudes and behaviour towards outgroup members, but to also examine relative ingroup attitudes and behaviour (Greenwald & Pettigrew, 2014). Greenwald and Pettigrew (2014) conclude (at least in America) that discrimination towards outgroup members is attributed mainly to helping ingroup members as opposed to hurting outgroup members.

Given the findings of past research on ingroup favouritism and outgroup derogation, it is important that prejudice is not only looked at in terms of attitudes towards outgroup members only, but also include attitude measures towards ingroup members as well. In the current study I investigated both outgroup and ingroup attitudes individually, and then compared the two groups' measures to get a relative score of intergroup attitudes.

### **The Present Research**

The present research aims to add to the negative and positive contact literature by utilizing a vicarious contact paradigm and experimentally manipulating participants to watch videos of various Texas Hold'em poker hands<sup>1</sup> with an overall neutral, positive, or negative form of contact between an ingroup and outgroup player. Previous research that has investigated the effects of vicarious contact on attitudes and willingness to engage in contact with outgroup members has posited that vicarious contact offers ingroup members a model to show that cross-group contact *can* take place, and *how* it can be achieved (Mazziotta et al., 2011). In their study, Mazziotta et al. (2011) let participants watch videos of either a Chinese student and a German student or two German students interacting in daily life. Those that watched the Chinese and German student interact had a greater willingness to engage in contact and improved attitudes towards outgroup members. The present study takes a novel approach by integrating the literature on positive and negative contact with vicarious contact in an online poker context. To the best of my knowledge, no one has yet utilised online poker as a means to studying intergroup relations. Previous research on online poker has mostly focused on problem gambling (e.g. Mitrovic & Brown, 2009), judgment and decision making (Siler, 2010), gender and race representations in poker avatars and advertisements (Ingen, 2008), and the subculture that exists for online poker players (O'Leary & Carroll, 2013).

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<sup>1</sup> In Texas Hold'em poker, players are each dealt two cards (hole cards) and given the chance to bet before three community cards are dealt (the 'flop') upon which players may bet again. Following this, two more cards are dealt (the turn & the river) both of which encompass a round of betting each.

The current study examined the effects of exposure to negative, positive, or neutral contact via an online poker context on three different dependent variables: intergroup prejudicial attitudes, perceived group variability, and intergroup trust. I chose to look at these three measures because although they are related, and interact with each other (Tropp & Pettigrew, 2005), they all measure three different constructs. For example, research has established a distinction between affective and cognitive dimensions of prejudice (e.g. Aberson, 2015; Tropp & Pettigrew, 2005). Measures that assess attitudes towards outgroup members probe affective aspects of prejudice, whilst measures that assess variability of the outgroup (e.g. stereotyping), tap more into the cognitive aspects of prejudice (Tropp & Pettigrew, 2005). Further, affective aspects of prejudice are more likely to generalize to the outgroup as a whole compared with cognitive aspects, especially if only a single instance of contact is experienced (Tropp & Pettigrew, 2005). Differing from both the other measures, outgroup trust suggests a desire to engage in behaviour (Kenworthy et al., 2015), and is therefore distinct from measures that simply assess intergroup attitudes.

In the current study, participants were recruited under the guise that they were to analyse a few No Limit Texas Hold'em (NLHE) poker hand plays. In actuality participants watched one of three videos edited from actual poker hands from a real online poker client—that portrayed either negative, positive, or neutral contact situations between a New Zealand (NZ) and Russian poker player. These contact situations were subtle and involved text dialogue in the chatbox which was located at the bottom left of the screen (thus it was not overly apparent that interactions were occurring). In reality, online poker players do use the chatboxes when playing and sometimes players use these spaces to insult and complement each other.

In the present work, Russia was chosen as the target outgroup because not only are they in the top five countries that have registered online poker players (Fiedler & Wilcke,

2011), but they also comprise less than 1% of the New Zealand population (Statistics New Zealand, 2013), making it unlikely that participants had particularly strong positive or negative feelings toward Russians beforehand. I hypothesised that participants who watched a video featuring a series of instances in which a NZ poker player engages in negative contact with Russian players, will display higher levels of intergroup prejudice, less perceived group variability, and less intergroup trust compared to participants that watched either a series of positive exchanges between the NZ and Russian player or a series of neutral exchanges between the two. Secondly, I hypothesised that watching the positive contact video will lead to lower levels of intergroup prejudice, greater perceived group variability and greater intergroup trust compared to the negative and neutral contact conditions. Another goal of the current study was to examine whether positive and negative contact exposure generalizes to a related outgroup.

## **Method**

### **Participants**

One hundred participants residing in Christchurch, NZ took part in the study, including 35 males and 65 females. Age information for the participants was not obtained in the study. The ethnic composition of participants comprised of New Zealand European ( $N = 51$ ), Asian ( $N = 16$ ), European ( $N = 9$ ), Indian ( $N = 7$ ), Pacific Islander ( $N = 2$ ), Middle Eastern ( $N = 2$ ), "Other" ( $N = 7$ ), and those that identified with more than one ethnicity ( $N = 6$ ). Most participants were New Zealand citizens ( $N = 65$ ), while the remaining were citizens of other countries excluding Russia, but all were based in New Zealand.

Participants were recruited via posters displayed around campus, from a "subjects wanted" recruitment website, or via the first year Psychology Department's participant pool. Those recruited via posters or the subject recruitment website were compensated with a \$10

gift voucher, with an additional chance to go into the draw to win a major prize of either a \$100 or \$50 gift vouchers, whilst those in the introductory psychology class received course credit for their time.

## Materials

**Poker Video Manipulation.** Three videos, each approximately five minutes in length, of online poker hands being played were created by editing actual screen captured footage from an online poker client software. All videos involved a NZ player at an online poker cash/ring table with five other players, including one allegedly Russian player (in actuality it was the primary researcher as the NZ player, and a Russian player as a confederate).<sup>2</sup> When playing online poker there are no cues about what players look like, so they can choose an assortment of avatars or personal images to display at the table beside their user name. For the purpose of this study, the NZ player had the New Zealand flag as their personal image, and the Russian player had the Russian flag (it is not uncommon to do so in the game). The other five players did not have flags as their image; instead they had images such as a chicken, fish, or wizard etc.

In the positive contact condition, participants witnessed positive exchanges between the NZ and Russian player, the second video primarily captured negative exchanges between the players (negative contact condition), and the final video showed no exchanges between the players (neutral condition). In the positive contact video, participants watched scenarios where the NZ and Russian players engaged in positive exchanges (e.g. throwing virtual trophies at each other and complementing one another on good hands). Negative contact consisted of the NZ and Russian players having unpleasant exchanges, for example, throwing virtual eggs at each other and negative verbal exchanges such as the Russian player calling

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<sup>2</sup> Note: The NZ and Russian players did not disclose their hands in real time to each other or collude in any way as this violates online poker rules, thus all hands were played legitimately.



the NZ player an insulting poker nickname such as a “fish” (a player that generally loses lots of money because they will call any bet), and the NZ player calling the Russian player a “donkey” (very poor player). The negative insults were personal in nature and not directed at a national group. Finally, the neutral condition showed no virtual exchange between the same Russian and NZ players. Any exchanges or comments that were made by the other players at the table were also edited out. Verbal exchanges were a side distraction from the actual task and made via the chatbox located in the bottom corner of the screen, away from the main action of the poker hands being played.

In the positive contact video, the NZ player’s nationality was made salient by displaying the New Zealand flag personal player image and by seeing the country of the player when the cursor was shown hovering over the username. The Russian player’s salience was made apparent by both the Russian flag personal image and also when the NZ player made a note on the Russian (a neutral comment about the Russian’s bet sizing) which displayed the player’s country as “Russian Federation”. Some examples of the positive contact that occurred during the video include the Russian player wishing the NZ player “good luck” (to which the New Zealander thanks the Russian back), and the NZ player throwing a trophy at the Russian player for making a good fold.<sup>3</sup>

For the negative contact video, the nationality of the players was again made salient via the flag images, and by hovering over the Russian player’s name and when writing notes to reveal their country as “Russian Federation”. Examples of negative contact include the Russian and NZ player exchanging insulting poker insults such as calling each other a “fish”<sup>4</sup>

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<sup>3</sup> Fold: To forfeit one’s hand by discarding their cards.

<sup>4</sup> Fish: An unskilled player that usually loses a lot of money e.g. by not being able to fold their hands.

and “donkey<sup>5</sup>”, by calling each other “moron” and “stupid” and by both players throwing virtual eggs at each other.

In the neutral contact video there were no interactions between any players at the table. Although the same Russian and NZ players were sitting at the table, they did not interact.

At the end of the videos, a screen popped up telling the participants to rate on the “Poker Hands Response Sheet” in front of them how well the hands of poker were played overall. The sheet contained two questions asking participants to rate how well the player they were told to take the perspective of (the NZ player), played the hands overall. The answers to the response sheet were not of interest to the current research, it was merely included to enhance the illusion that participants were assessing poker hand plays.

### **Demographic Measures**

Demographic measures included questions about participants’ sex, ethnicity, nationality, level of university study, and subject major. They then filled out questions relating to their previous poker playing experiences including questions on how frequently they play/ have played poker, and if they have played online poker. There were also filler questions relating to poker to ensure the study’s cover story was believable (see Appendix A for full set of questions relating to participants’ poker playing experience). All of the above demographic measures were presented as the first Qualtrics survey (the “poker study”).

### **Prejudicial Attitudes**

A feeling thermometer (Haddock, Zanna, & Esses, 1993) was used to gauge participants’ attitudes towards Russians. Participants were instructed to indicate on a

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<sup>5</sup> Donkey or Donk: A very bad poker player.

thermometer-style scale from 0 – 100, how they felt about various ethnic groups with lower scores indicative of cold/ unfavourable feelings and higher scores indicative of warm/ favourable feelings. To make participants less suspicious about the true nature of the study, feeling thermometers for other national groups were asked, thus overall participants had to rate how they felt about Russians, Chinese people, Arab people, Americans, and New Zealanders. Responses from the Arab feeling thermometer, trust, and perceived group variability measures, served as the comparison related outgroup, to see whether positive and negative contact effects generalised to this outgroup as well.

### **Trust Measures**

Trust towards Russians was measured using 3 items taken from previous research (e.g. Brehm & Rahn, 1997; Kenworthy et al., 2015). The first item was measured on a 4–point scale and probed fairness “Do you think most Russians would try to take advantage of you if they got a chance, or would they try to be fair?” The second item which probed trust was measured on a 4–point scale “Would you say that most Russians can be trusted or that you can’t be too careful with them?” Finally the third item was measured on a 5–point scale and measured exploitation “Russians will exploit me if I trust them”. Participants had to make trust ratings for all of the five national groups being asked about (to avoid suspicion).

### **Perceived Group Variability**

Perceived group variability was measured by a two-item scale taken from Swart, Hewstone, Christ and Voci (2011). Participants had to rate on a 5–point scale to what extent they thought people within the various national groups were similar/ different: “All Russians think the same and have similar views and opinions on things”; “I think all Russians behave in the same way”.

## Procedure

Participants were recruited under the guise that they were to analyse a few hands of Texas Hold'em poker. Participants were welcomed into the lab and asked to take a seat in front of a computer. Participants were verbally briefed that they would be doing two separate studies as both were independently too short to be eligible for course credit or a \$10 voucher. Therefore, participants were told that the poker study would be combined with another short survey (which was presented as the experimenter collecting data on behalf of another researcher). Both studies were actually part of the same study, but in order to prevent participants from connecting pieces of the study, deception was necessary.

Participants were then given an information sheet and consent form to sign for the "poker study", and once consented, participants began the first Qualtrics survey, which consisted of them first filling out their demographic information and previous poker playing experience questions. They were then prompted to let the researcher know that they had finished filling out the survey so that the poker videos could be loaded. The researcher came over and told participants to judge how well the poker hands were played overall based on their own level of poker playing experience, and to take the perspective of the player with the hole cards<sup>6</sup> showing (the NZ player). The participants were then randomly assigned to one of the poker videos (positive, negative, or neutral contact video). Once they had watched the video, participants rated the poker hands they had just watched on the poker response sheet in front of them.

Next, participants were given the consent form for the "second study" (a second consent form was used to aid in the illusion of participants taking part in two different studies). This study was framed as a survey on social attitudes. They then answered the

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<sup>6</sup> Hole cards or pocket cards: Cards dealt to a player. In Texas Hold'em each player gets dealt two cards.

questions on the second Qualtrics survey including the feeling thermometers, the perceived group variability scales, and the trust items. Participants were then probed for suspicion before being debriefed about the true nature of the study. Participants were finally thanked and given their vouchers or course credit.

## Results

Data from three participants were excluded from all analyses because two participants did not adequately complete the study, whilst the other participant had disclosed to the researcher that they had strong negative feelings towards Russians as they had invaded their country of origin. There were no issues with skewness or kurtosis for the attitudes and trust dependent variables; however there were issues with the skewness and kurtosis for the perceived group variability scales. To fix the skewness and kurtosis issues, two outliers were removed for the analysis of group variability. There were no significant differences in responses to all dependent variables based on participants' ethnicity, residency/ citizenship, or gender; therefore these factors will not be mentioned further.

### Prejudicial Attitudes

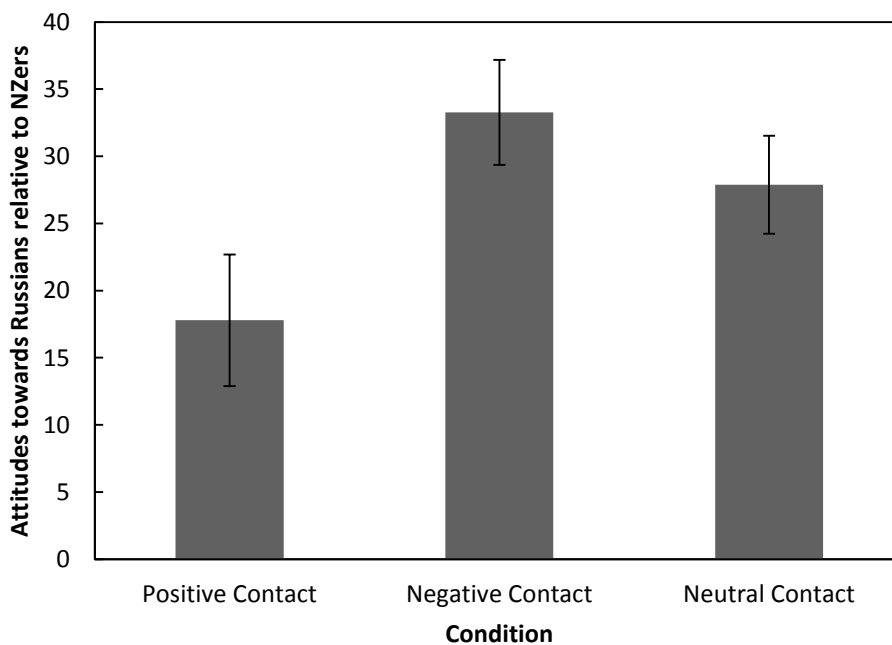
A one-way ANOVA revealed that there was no significant difference in prejudicial attitudes towards Russians (i.e. outgroup derogation) between the three contact conditions (see Table 1 for all prejudicial attitudes means),  $F(2, 93) = 1.42, p = .247, \eta^2 = .03$ . Similarly, there was a non-significant effect of the manipulation on attitudes towards New Zealanders alone (i.e. ingroup favouritism),  $F(2, 93) = 2.09, p = .129, \eta^2 = .04$ . However, to gain a better understanding of intergroup attitudes similar to previous work (e.g., Schmid, Hewstone, Tausch, Cairns, & Hughes, 2009), a difference score was calculated by subtracting the mean of attitudes toward Russians from mean attitudes toward New Zealanders. Using this index of

intergroup attitudes as a dependent measure, a one-way ANOVA revealed a significant effect of the manipulation,  $F(2, 93) = 3.48, p = .035, \eta^2 = .07$  (see Figure 1).

Table 1.

*Mean Attitude Thermometer Ratings (M) and Standard Deviations (SD).*

|                   |           | Positive | Negative | Neutral |
|-------------------|-----------|----------|----------|---------|
| Russian Attitudes | <i>M</i>  | 59.53    | 51.93    | 55.75   |
|                   | <i>SD</i> | 19.19    | 18.42    | 16.24   |
| NZ Attitudes      | <i>M</i>  | 77.32    | 85.20    | 83.63   |
|                   | <i>SD</i> | 21.09    | 12.48    | 13.89   |



**Figure 1.** Mean difference scores for attitudes towards Russians relative to New Zealanders, where higher scores represents more prejudicial attitudes towards Russians (NZ Attitudes – Russian Attitudes).

Planned contrasts revealed a significant difference in intergroup attitudes between the positive and negative conditions,  $t(60.50) = -2.47, p = .016$ , but there was no significant difference in prejudicial attitudes towards Russians relative to New Zealanders between the positive and neutral contact conditions,  $t(60.17) = -1.65, p = .104$ , nor was there a significant

difference in prejudicial attitudes towards Russians relative to New Zealanders between the negative and neutral contact conditions,  $t(59.42) = -1.01, p = .317$ .

### Outgroup Trust

Three items were used to assess trust. The means and standard deviations for the items measuring trust towards Russians and trust towards New Zealanders are displayed in Table 2.

Table 2.

*Mean Ratings (M) and Standard Deviations (SD) for Trust Towards Russians and Trust Towards New Zealanders items.*

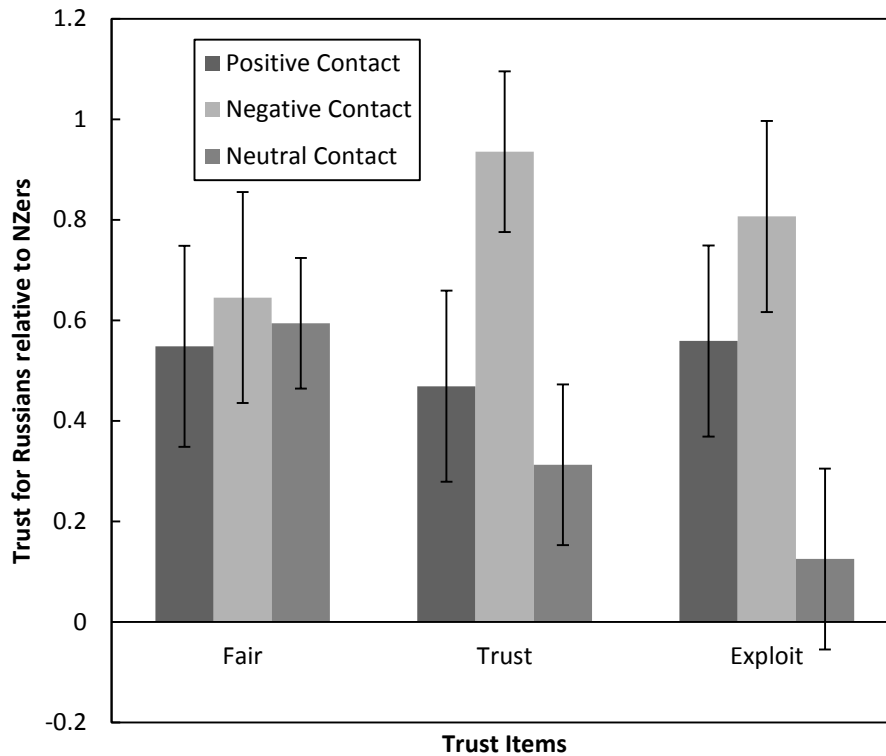
|                                |           | Positive | Negative | Neutral |
|--------------------------------|-----------|----------|----------|---------|
| Russians would try to be fair? | <i>M</i>  | 2.67     | 2.52     | 2.56    |
|                                | <i>SD</i> | 0.69     | 0.92     | 0.56    |
| Can trust Russians?            | <i>M</i>  | 2.41     | 2.71     | 2.34    |
|                                | <i>SD</i> | 0.67     | 0.78     | 0.60    |
| Russians will exploit me       | <i>M</i>  | 2.62     | 2.77     | 2.41    |
|                                | <i>SD</i> | 0.82     | 0.85     | 0.71    |
| NZers would try to be fair?    | <i>M</i>  | 3.23     | 3.16     | 3.16    |
|                                | <i>SD</i> | 0.88     | 0.58     | 0.57    |
| Can trust NZers?               | <i>M</i>  | 1.91     | 1.77     | 2.03    |
|                                | <i>SD</i> | 0.81     | 0.62     | 0.82    |
| NZers will exploit me          | <i>M</i>  | 2.06     | 1.97     | 2.28    |
|                                | <i>SD</i> | 0.89     | 0.66     | 0.92    |

The item used to measure fairness was reverse coded so that its anchors were in the same direction as the other two items, where higher numbers indicated less trust. Because one of the three items (exploit) had a different anchor, all three items were analysed in a

MANOVA. Using Pillai's Trace (as recommended by Field, 2013), there was no significant effect of condition on participants' ratings of trust towards Russians,  $V = .09$ ,  $F(6, 182) = 1.37$ ,  $p = .228$ ,  $\eta^2 = .04$ . Similarly, there was also no significant effect of condition on participants' ratings of trust towards New Zealanders,  $V = .06$ ,  $F(6, 180) = .88$ ,  $p = .51$ ,  $\eta^2 = .03$ .

However, similar to the calculation of an index of intergroup attitudes, a difference score was calculated for Russian trust relative to NZ trust such that larger numbers indicated greater distrust in the outgroup. These were then analysed in a MANOVA. Using Pillai's Trace there was a significant effect of condition on participants' ratings of trust towards Russians relative to New Zealanders,  $V = 0.15$ ,  $F(6, 178) = 2.41$ ,  $p = .029$ ,  $\eta^2 = .08$ . Separate univariate ANOVAs on the trust items revealed a significant effect of condition on trust ratings towards Russians relative to New Zealanders,  $F(2, 90) = 3.64$ ,  $p = .030$ ,  $\eta^2 = .08$ ; a significant effect of condition on whether Russians would exploit participants if they trusted them,  $F(2, 90) = 3.27$ ,  $p = .042$ ,  $\eta^2 = .07$ ; however, there was no significant effect on condition and whether participants thought Russians would try to take advantage of them or whether they would be fair,  $F(2, 90) = .09$ ,  $p = .913$  (zero order effects; See Figure 2).





**Figure 2.** Trust towards Russians relative to trust towards New Zealanders (trust difference score = Mean of Russian trust items – mean of NZ trust items). Higher scores denote less trust for Russians.

### Perceived Group Variability

Perceived group variability was assessed by taking the composite score of the two perceived group variability items to create one variability scale. Each scale (Russian variability and NZ variability) displayed good internal reliability (Russian variability:  $\alpha = .89$ ; NZ variability:  $\alpha = .87$ ). For just the Russian perceived variability scale, there was no significant difference between the conditions of Russian variability,  $F(2, 94) = 1.26, p = .289, \eta^2 = .03$ , nor was there a significant difference across conditions for NZ variability,  $F(2, 94) = 1.39, p = .255, \eta^2 = .03$ . A difference score was calculated to measure perceived Russian variability relative to perceived NZ variability by subtracting the mean variability of Russians score from the mean variability of NZ score. However, this index also revealed no significant

effect of the manipulation on evaluations of intergroup variability,  $F(2, 94) = .94, p = .395, \eta^2 = .02$ .

### **Comparison Ethnic Group**

To establish whether manipulating the type of contact exposure has a specific effect on attitudes, trust, and perceived variability towards Russians alone or generalises to other outgroups, I examined whether the manipulation had a specific impact on evaluations of Arabs. I specifically chose Arabs because Arabs and Russians account for similarly small percentages of the NZ population—less than 1% of total New Zealand population (Statistics New Zealand, 2013), thus participants are equally unlikely to have personal contact with both groups.

There was no significant difference in prejudicial attitudes towards Arabs across the conditions ( $p > .90$ ), nor was there a significant difference in Arab relative to NZ attitudes,  $F(2, 93) = 1.13, p = .328$  (zero order effects). The trust items were analysed via a MANOVA and using Pillai's Trace; these too revealed no significant effects of condition on levels of distrust to Arabs relative to New Zealanders,  $V = .075, F(6, 180) = 1.17, p = .324, \eta^2 = .04$ . Finally, there were no differences in perceived group variability of Arabs across the conditions ( $p > .30$ ), and no significant difference in perceived group variability of Arabs relative to NZ group variability,  $F(2, 94) = 1.23, p = .298, \eta^2 = .03$ . The results with Arabs as a target group indicates that the effects of positive and negative contact with Russians did not generalise to this outgroup.

### **Discussion**

The aim of the current study was to examine whether exposure to positive, negative, or neutral contact in an online poker setting influenced intergroup attitudes, trust and

perceived variability. Preliminary results, using only two-thirds of the desired sample, partially support the hypothesis that watching a fellow NZ poker player (vicarious contact) engage in negative contact will lead to more negative attitudes towards Russians (relative to NZers) compared with watching positive or neutral contact, while watching positive contact between the players will lead to less prejudicial attitudes towards Russians (relative to NZers) compared to watching negative or neutral contact. Although there was no difference in attitudes specifically towards Russians between the conditions (i.e. outgroup derogation), when comparing attitudes towards Russians relative to attitudes towards New Zealanders, there was a significant difference across conditions. This suggests that ingroup favouritism and outgroup derogation are both simultaneously at play here such that participants in the negative contact condition rated Russians less favourably and New Zealanders more favourably, and those in the positive contact condition rated Russians more favourably and New Zealanders not as favourably relative to the other conditions. This phenomenon referred to as ingroup love and outgroup hate (Brewer, 1999), is hypothesised to underlie prejudicial attitudes and behaviours in an intergroup context. It is not necessarily attitudes towards the outgroup changing in a negative direction (outgroup derogation), but also attitudes for one's own ingroup changing in a more positive direction that is driving intergroup prejudice (Brewer, 1999).

The second hypothesis was that watching a fellow New Zealander engage in negative contact will lead to less trust towards Russians (compared to the other two conditions), whilst watching the New Zealander engage in positive contact towards Russians will lead to more trust towards Russians (compared to the other two conditions) was also partially supported. Although there was no difference in trust ratings towards Russians specifically, two of the three trust items when comparing trust towards Russians relative to trust towards New Zealanders did differ significantly. The first of these items probed whether participants

thought Russians could be trusted, and the second item probed whether participants thought Russians would exploit them if they trusted them. The item that was not significant probed whether participants thought Russians would try to take advantage or try to be fair. This may have been not significant due to this question gauging fairness, rather than trust.

The last hypothesis that watching negative contact between NZ and Russian players will lead to less stereotypical views or perceived group variability towards Russians compared to the other conditions, whilst watching positive contact will lead to more perceived group variability towards Russians (compared to the other conditions) was not supported. A difference in perceived variability of Russians relative to perceived variability of New Zealanders was also not supported. This lack of effect may be because a measure of group variability relates more to stereotyping and more basic cognitive processing about social groups, which is quite different from the other measures that assess affective reactions to the ingroup and outgroup or more basic intentions such as approach-avoidance.

### **Theoretical Contributions**

The present findings are quite promising as the interactions between the two targets in the online poker context were extremely subtle and occurring in the background of the primary task of the participants. These findings occurred even though the participants were not asked to focus on the contact, but rather their task was to decide whether the poker hands were being played well or not.

The finding that participants had less favourable attitudes towards Russians relative to New Zealanders in the negative vicarious contact condition and more favourable feelings towards Russians relative to New Zealanders in the vicarious positive contact is consistent with prior research on positive intergroup contact reducing prejudicial attitudes (e.g. Pettigrew & Tropp, 2008), negative intergroup contact increasing prejudicial attitudes (e.g.

Barlow et al., 2012) and research that has demonstrated the efficacy of vicarious contact as a means to examine intergroup contact (Mazziotta et al., 2011). Also, as significant results were found when comparing the attitudes towards Russians and New Zealanders, these results also support the literature on ingroup favouritism and outgroup derogation (Brewer, 1998; Buttelman & Böhm, 2014; Halvey et al., 2012), which in the case of the current study, meant that participants' positive attitudes towards New Zealanders increased (and favourable attitudes towards Russians decreased) in the negative condition, whilst in the positive condition participants' attitudes towards New Zealanders were not rated as favourably (compared to rating New Zealanders in the negative condition), and additionally attitudes towards Russians were more favourable compared to the negative condition. Therefore, the results support the notion that with such intergroup contact, it may not solely be attitudes toward outgroup members that change, but also attitudes towards one's own ingroup that also change.

It is not clear what is driving the outgroup hate and ingroup love in the current study. It could be the Russian's negative comments and actions led to slightly more negative attitudes towards Russians, whilst simultaneously threatening the ingroup members' self-concept leading to more ingroup favouritism (Crocker, Thompson, McGraw, & Ingerman, 1987). It could also be that the NZ player *derogating* the outgroup member (as opposed to the Russian's negative actions) led to an increase in collective self-esteem—i.e., self-esteem derived from groups that one belongs to (Branscombe & Wann, 1994), which, in the current study, would be the New Zealand identity. Previous research has demonstrated that when an ingroup social identity has been threatened by an outgroup, derogating outgroup members leads to the restoration of collective self-esteem (Branscombe & Wann, 1994). In the current study, it is possible that in the negative condition when the Russian insulted the NZ player—for example, when the Russian called the New Zealander “stupid”—participants' social

identity may have been threatened, thus leading to at least ingroup favouritism, and possibly also more prejudice towards the outgroup, relative to the other conditions. It should be noted that in the current study the insults were personal and not an insult towards either Russian or NZ national identities as a whole. It is therefore recommended that future research measures collective self-esteem as a mediator to see whether it is indeed a reduction in collective self-esteem that leads to both ingroup favouritism and outgroup derogation.

Research in vicarious contact has also proposed that watching intergroup contact not only acts as a model *that* intergroup contact can occur, but also on *how* intergroup contact can occur (Mazziotta et al., 2011). Therefore it would have been advantageous to measure national identification to see whether those closely identified with the New Zealand identity were more influenced by the positive or negative exchange they witnessed between the ingroup (NZ) and outgroup (Russian) players. Measuring national identification would have been useful when excluding participants from analyses as those that did not identify with the New Zealand identity could be omitted from the results. Nevertheless, all participants were based in Christchurch, NZ where the study took place with the majority of the sample being either NZ citizens or permanent residents (i.e. none were tourists).

Even though there was a significant effect of contact valence on ingroup favouritism and outgroup derogation collectively for both the prejudicial attitudes and trust items, there was no difference between the conditions on just measures of outgroup attitudes or trust (e.g. only attitudes towards Russians). This may be due to the smaller sample size which is only two-thirds of the intended sample. The observed effect sizes suggest that there is a small to medium effect being detected with the present sample, so additional data may reveal a significant effect. Additionally, the use of only an explicit measure for prejudicial attitudes which can be susceptible to socially desirable responding by participants (Fisher, 1993) may be another reason for not detecting a significant effect on outgroup attitudes and trust. The

participants may also have not picked up on many of the exchanges between the players in the video seeing as their primary task was to assess poker hand play.

Contrary to the hypotheses on perceived group variability, there were no significant differences across the conditions—even when perceived variability of Russians was analysed relative to perceived variability of New Zealanders. This is contradictory to previous research that found indirect contact (imagined contact about homosexuals) increased perceived outgroup variability (Turner, Crisp, Lambert, 2007). Although it is consistent with CMC research which found stereotyped perceptions were not affected by online intergroup contact (Alvidrez et al., 2015), it should be noted that these studies did not utilize a vicarious paradigm like the current study.

The measure that this study adopted to assess perceived variability probed at whether all Russians were seen as being similar to each other. I predicted the negative contact condition would have rated Russians as having less perceived variability because negative stereotypes would have been strengthened whilst watching the video (Aberson, 2015), leading participants to think Russians as a group are homogenous in their thoughts and behaviour. Conversely, the positive contact condition should have rated Russians as having more variability, particularly if the positive portrayal of the Russian was incongruent with prior held stereotypes about Russians. Previous studies that tried to measure stereotypicality of outgroup members, have used a measure where participants are asked to make marks where they believe the two most extreme group members would fall along a scale of attributes (e.g. Park & Judd, 1990). Other researchers have argued however that this may change the dispersion of the group by changing how extreme members cluster around the central tendency, but it does not change the stereotypicality of the group as a whole (Paolini, Hewstone, Rubin, & Pay, 2004). For this to happen, participants need to be exposed to more than one stereotypically disconfirming member (Hamburger, 1994), otherwise subtyping can

occur where a single disconfirming member is seen as an exception to the group typicality (e.g. Barack Obama as an exception to the norm and thus he does not change negative stereotypes about African Americans in general; Welch & Sigelman, 2011). In the current study, participants were exposed to only one Russian player and therefore participants may not have had enough exposure to make an informed decision (especially considering there are not many Russians in NZ to have preconceived stereotypes to change).

It has also been suggested that positive contact is more likely to change affective aspects of prejudice such as feelings/ attitudes, rather than changing cognitive aspects of prejudice such as stereotypes (Tropp & Pettigrew, 2005). In the current study, it is conceivable that watching positive contact was not enough to change stereotypes about Russians (if there were any preconceived stereotypes), especially considering only one Russian player was shown in the videos. On the other hand, previous authors posit that negative contact appears to be more of a consistent predictor of changing cognitive dimensions of prejudice, with negative stereotypes being strengthened with negative contact (Aberson, 2015). In the current study it is possible that the use of only one outgroup member was not sufficient in changing perceptions of the entire group, especially given that the measure was of perceived variability and not stereotyping in particular. With limited prior exposure to Russians, participants in the study may not have strong positive or negative stereotypes, and their perceptions of the group may simply not change based on the interaction of one Russian player with a NZ player.

### **Broader Implications**

Online poker is a ripe context to study intergroup relations in as it is a real life contact situation for thousands of people daily. For most people they are going to encounter players from countries where they have never met people from directly before, and so these players



are may be seen as prototypes or exemplars of the outgroup as a whole. When a player gets knocked out of an online poker tournament by an outgroup player, especially when the top prizes are in the thousands or millions of dollars (which is possible even when buying into the tournament for little money), animosity toward that player can arise, and because the only information one readily has about that player is their nationality, it is easy for the losing player to take their emotions out on the outgroup as a whole.

The biggest difference between watching vicariously and actually playing online is that there is money at stake. This of course brings issues itself with problems such as a realistic/ resource threat offsetting any positive interactions that players may have with outgroup members and heightening any negative attitudes and feelings. Players compete for real money in online poker (although there are also play money options) and as specified by Sherif and Sherif's (1969) realistic group conflict theory (RGCT), there consequently is likely to be negative outgroup attitudes formed when an opponent is successful at taking money off a player. The additional issue of experiencing loss aversion (e.g. where losing \$100 feels disproportionately worse than winning \$100 feels good; see Kahneman & Tversky, 1984) may further heighten negative attitudes formed via a threat to resources.

Another difference between watching vicariously and actually playing is that there is a threat of being personally abused by other players. Research looking at online intergroup contact (Amichai-Hamburger, Hasler, & Shani-Sherman, 2015) has found that where there is unstructured contact, such as blogs, forums etc., where there is little to no supervision of the contact, people could feel anxiety from potentially uncontrolled behaviour of other users. In online poker although there are rules about what should not be said in the chatbox, this is difficult to enforce (possibly due to the vast amount of tables playing simultaneously on an individual poker site alone). Also some of the content that is allowed is still offensive to many players (e.g. being called a fish, donkey, or just generally a bad player). This of course

can lead the recipient to go on “tilt”<sup>7</sup> leading to worse decisions that perpetuates the opinion of them as a bad player. Such opinions could generalise to perceptions of the group as a whole.

Indeed, online poker offers a multitude of contact scenarios. Vicarious contact is common in online poker and occurs when sitting at a table with other players and watching the other players interact, or when opening up any table to watch without playing. Virtual contact is the most prominent form of contact for those that play online poker as they are constantly having virtual contact with other players from around the world. Extended contact can also be observed if a player sees another player from their country have a cross-group friendship with online players from other countries.

Future research could therefore apply any of these forms of contact to the online poker context to assess intergroup contact in this setting experimentally. For example, a program could be made to introduce other identifying features of players e.g. age, sex, etc. to see how this additional information affects attitudes towards national outgroups. Or how consistently losing (vs. consistently winning, or a mix of both winning and losing) to an outgroup member can affect attitudes. Participants could also play against (or even watch vicariously) an outgroup member and engage in positive followed by negative, or negative followed by positive contact to see how a valence change in contact affects attitudes.

In terms of intergroup trust, prior research has examined how online gaming, specifically, massively multiplayer online role-playing games (MMORPG’s) can affect generalized trust (Lundmark, 2015). Lundmark (2015) looked at young males in the cooperative environment of World of Warcraft (WoW) over a 10-month period where

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<sup>7</sup> Tilt: To be in an emotional state of mind, frustrated, or angry, generally from just being beaten especially by a hand that had little chance of winning. This leads players to then play sub-optimally, usually resulting in more money being lost.

playing cooperatively with other players (to achieve goals within the game) lead to a positive effect on generalised trust. In contrast, online poker is very much a solitary competitive game and so trust toward outgroup members would probably be harder to achieve when the aim of the game is to outplay your opponents. Best and Krueger (2006) discovered a positive relationship with generalized trust and interacting socially online with people not known in real life. It would be interesting for future research to investigate this from an online poker perspective due to the competitiveness of the game (and monetary rewards), to see if this finding still holds.

The results from this study can have implications for other forms of computer mediated contact or online games. With a multitude of options online to play games with people from all over the world, this research opens up the door to study how interacting with other players online can affect attitudes, behaviours, self-esteem and more. This research also offers insight into vicarious contact having positive effects for outgroup attitudes and trust, and this could possibly be extended to virtual and extended (cross-group friendship) contact. Even though negative experiences may occur on the internet, there is hope that having positive experiences with outgroup members can have lasting positive effects, particularly if reinforced with more positive contact relative to negative contact. Perhaps controlled positive vicarious contact utilizing CMC for traditionally hostile national groups could be a first step in changing prejudicial attitudes towards one another. Vicarious, extended, and virtual contact, such as that experienced whilst playing online poker, allows users to encounter outgroup members that they may never have the chance to meet in the real world. This research sheds insight into how people maybe influenced by vicarious contact with unfamiliar outgroup members. This of course could inform the literature on origins of stereotypes, prejudicial attitudes, and trust.

This study can inform research in CMC by showing that even just merely watching an ingroup member have either positive or negative contact with an outgroup member can impact prejudicial attitudes and trust towards that outgroup as a whole. This study can also help inform online poker research as it demonstrates that even just subtle contact in the background of a poker table can influence reactions from those just sitting at the table and not necessarily engaged in the contact too. If just merely watching intergroup contact take place had an effect, it is feasible that someone experiencing this contact virtually first-hand could have not just their game play, but also their opinions about other nationalities affected by other players at an online poker table.

### **Limitations and Future Research**

Although the present study reveals some promising effects of positive and negative vicarious contact through online poker on intergroup attitudes and trust, there are limitations to consider. For example, most of the sample had not played online poker before (64%), so the videos may not have had as much impact on attitudes, trust, and perceived group variability as participants may have been spending much time trying to follow along. This however adds strength to my hypotheses because even though many participants may have been trying to work out what was going on in their primary task of assessing poker hands, they were still affected by positive and negative contact that was subtly occurring in the background. It would be advantageous for future researchers utilizing a similar paradigm to recruit more online poker players, as they would be familiar with online poker interfaces and so they may be more susceptible to these effects with more cognitive resources to spare while watching the videos.

It would also be ideal to test how often participants have played online poker before as a moderating variable. Due to frequent online poker players being constantly exposed to

Russian players, it would be interesting to examine whether watching positive contact can enhance positive attitudes towards Russians, or whether they are not as affected by vicarious contact than people who rarely/ never play online poker. It is possible that because frequent online poker players will play thousands of poker hands with Russians, both where they win and lose against them, that they still have less favourable attitudes and opinions about them overall because of loss aversion: losses feel worse than winning an equivalent amount feels good (Kahneman and Tversky, 1984). Loss aversion, combined with the perceived frequency that New Zealanders lose to Russians often (due to the sheer number of Russian online poker players; Fiedler & Wilcke, 2011), may facilitate NZ online poker players to feel more animosity towards Russians. To frequent online players, the perceived repeated losses may make them feel they have been “cheated” out of winning poker hands by Russians before.

It is also important to consider that the study took approximately 30 minutes to complete, so questions remain as to how long these effects would last. Follow up studies should be conducted to see how long these changes in people’s trust and attitudes last. It is worthy to note, however, that in actual online poker, the amount of contact is much greater as playing the game in one sitting can take hours (some tournaments last over 12 hours), and frequent players play whenever they like, some even as a full time job.

Lastly, another issue evident in the current study and also in research on CMC (Alvidrez et al., 2015), is that exposure to a single outgroup member has failed to shift stereotyped beliefs. Accordingly, it would be advantageous for future studies to have repeated exposure to different members from the same outgroup and thus use a measure of both central tendency and perceived group variability to assess whether contact with stereotype disconfirming members in an online poker paradigm can change both group dispersion (shift of central tendency) and also stereotypes about a group in general. The present research simply provides a starting point for many such possibilities for how the psychology of

intergroup relations can be used in the domain of online poker to explore its many inadvertent consequences in society.

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## Appendix A

In this section of the study, we want to know about the amount of time you've spent playing poker:

Where have you played poker before? Check all that apply to you:

- At my own or a friend's house either for cash or fun
- At a casino
- At a public establishment other than a casino e.g. a pub
- Online, either for real or play money
- As an app on your phone or tablet
- Other please state: \_\_\_\_\_

If you had to guess, how often do you play poker?

- Once a year or less
- Every few months
- A few days or less each month
- Once a week
- A few times a week
- Almost everyday

The following questions in this section relate to online poker:

In your lifetime, how many hours would you estimate you have played poker online? (Note examples are given of how many hours someone may have played over a course of a year)

- I have never played online poker
- 0-20 hours (e.g. played a few times in your life)
- 21-500 hours (e.g. you play a couple of hours on a few days each month)
- 501-2000 hours (e.g. you play a few times each week)
- 2001-3000 hours (e.g. you play most days of the week)
- 3000+ hours (e.g. you have played frequently for a number of years/ or you play more than 8 hours a day every day for at least a year)

Alternatively, if you know the number of hands you have played online, please enter that here: \_\_\_\_\_

Please tick all that apply to you in relation to online poker (this applies for all types of poker including Hold'em, Omaha, etc.)

- I have never played online poker
- I have played cash games
- I have played tournaments
- I have played sit and go's



When playing online poker what stakes do you mostly play?

- I do not play online poker
- Micro stakes (1¢/ 2¢ blinds – 5¢/ 10¢ blinds)
- Low stakes (10¢/ 20¢ blinds – 50¢/ \$1 blinds)
- Medium stakes (\$1/ \$2 blinds - \$3/ \$6 blinds)
- High stakes (\$5/ \$10 blinds - \$400+ blinds)
- Play money

In this section of the study, we want to know about social influences of poker.

How often do you find yourself discussing how you (or your opponents) played poker hands, with others?

- Never
- Rarely
- Sometimes
- Often
- Always

A lot of people that play poker are introduced to the game by family or friends. Do you or your close friends or family play poker?

- Yes
- No

In this section of the study we want to ask you questions regarding personality differences/ personal preferences:

How would you personally describe your style of poker play? If unsure write “not sure”. (e.g. purely psychological; 50% psychological 50% statistical):

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Have you ever read any books on poker strategy (e.g. Dan Harrington’s “Harrington on Hold’em”), or searched poker forums for strategy advice (e.g. “pocketfives” forum):

- Yes
- No