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Abstract

This study examines whether the impact of offline identities on Computer-Mediated

Communication (CMC) is stable across different social contexts or whether it depends on

which identity aspect is salient. Field experiments with 206 teenagers tested the influence of

gendered, ethnic, youth and personalized identities on teenagers' chat behavior and

cognitions. The findings show that offline identity varies in its relation to internet self-

efficacy but not chat partner selection. Self-efficacy differed significantly between boys and

girls when youth and gender identities were emphasized but not when stressing personal

identity. Across conditions, teenagers were most likely to choose chat partners from similar

ethnic and opposite sex backgrounds. This partly supports the SIDE framework and argues

that offline identities impact online behavior and self-perception but that this effect depends

on which identity aspect is activated.

Keywords: Social Identity, Computer-Mediated Communication, Gender, Ethnicity, Internet

self-efficacy, Chat, Experiment.

Offline Social Identity and Online Chat Partner Selection

Introduction

The internet, and its proliferation of peer-to-peer communication platforms, has become a prime place for interaction amongst adolescents (Boneva et al. 2006; boyd & Ellison 2008; Valkenburg, Shouten & Peter 2005). This importance of online social interaction amongst teenagers mirrors their strong need for socialization and belonging offline (Adams & Marshall 1996; Reich, Subrahmanyam & Espinoza, 2012; Subrahmanyam & Greenfield, 2008). Previous research shows that offline identities influence young people's online communication cognitions and behaviors (Orchard & Fullwood, 2010; Livingstone, 2008) and this paper advances this research by testing whether or not the influence of offline identities is constant in different use contexts. This paper thus investigates whether *shifts* in teenagers' offline identification influence the way in which they interact online.

It aims to answer the following question through experiments, basing itself in youth identity development theories and Social Identification and Deindividuation (SIDE) frameworks: *Does awareness of certain identity aspects influence how teenagers feel about themselves and act in online environments?*

To mimic identity shifts, youth, gender, ethnic or personalized identities were experimentally primed. The effect of this priming was tested for teenagers' self-confidence and partner selection in online interaction.

Most platforms of online interaction (eg. instant messaging, social networking) involve communication with existing, offline friends (Ellison et al. 2006, 2007; Mesch & Talmud, 2007). Chat rooms, which are frequently used amongst UK teens (Livingstone et al. 2011), are different and involve a higher percentage of interactions with strangers (Blais et al. 2008; Wolak et al. 2003). In discussions amongst policy makers and academics, meeting strangers

online has been of particular concern and most of these studies therefore focus on

victimisation, on grooming of children by adults, and the risks young people take (McCarty et

al, 2011). Nevertheless, little is known about what influences the decisions teenagers

themselves make about contacting strangers and meeting peers in chat rooms (Smahel and

Subrahmanyamn, 2007). Because of the public concern about understanding decisions to

meet strangers and because chat rooms involve a greater degree of anonymity which leaves

space for identity play, chat room cognitions and behaviors were chosen as objects for this

study.

Background

     Adolescent identity development

One of the important psychological challenges for teenagers is getting to grips with who

they are and where they belong. Interaction and communication with peers are important at

this stage of life both to build a supportive social network and to develop a sense of self

(Marcia 2002; Kerpelman & Pittman 2001; Tarranta, MacKenzie & Hewitt 2004). Davis

(2012) has argued that this has now shifted to the internet.

The need of teenagers to identify with certain social groups and a strong desire to be

romantically involved with others are widely recognized by researchers (Brown 1990;

Crosnoe 2000; Feiring 1999, Connoly, Furman & Konarski 2000; O'Sullivan et al. 2007;

Zarrett & Eccles 2006). These developing, shifting ideas of belonging influence how they

think about themselves and who they want to interact with. The latter aspect is mostly absent

in research into how this works online. What is clear is that offline personality and identity

aspects are used by teens to determine how to present themselves and interact online (e.g.

Valkenburg et al, 2005).

It is not clear if the development of social identity in general is experienced in the same way by teenagers from different socio-cultural backgrounds. Phinney (1989) argues that identity development is shaped by context and showed that ethnic minority teenagers are more likely to suffer identity crises in adolescence which influences their interactions. Tynes,et al(2012) conducted research with ethnic minorities online and demonstrated that a strong ethnic identity and ethnic self-confidence allow teens to interact more freely and securely online.

Others have argued that girls' gendered identities follow the same conflicting pattern (Waterman 1982) and that girls feel more peer pressure to demonstrate identity conform behavior and cognitions than boys (Mack et al. 2007; Underwood & Buhrmeister 2007). Renold (2006) discusses how this works in relation to communication and relationships where the emphasis is on femininity and on establishing "womanhood" through choosing heterosexual (romantic and friendship) partners. Similarly, O' Brian et al. (2000) showed that girls are socialized more explicitly from an early age to understand which situations they should feel confident in as compared to activities that are more masculine.

Recent work with teenagers has looked at links between social identity, online interactions and identity expressions. This research largely focusses on social networking sites where most interactions are with people they know offline and on which offline identities are known. This research shows how different identity and personality aspects influence identity experimentation on the internet just like they do offline (e.g. Anderson & Brown-McCabe, 2012; Valkenburg et al, 2005). For example, Livingstone (2008) demonstrated that offline social groups influence how teenagers act out their identity on social networking sites according to social norms related to offline social identities.

There is a considerable body of work around gender identities and adolescents' online identity development showing that, while there is some identity play, offline male-female

differences in confidence and self-expression are reflected in interactions with others in the online space (Kapidzic & Herring, 2011; Manago et al, 2008). For example, Calvert et al (2003) show how young people create online characters of themselves that represent their offline properties and that how these characters behave is influenced by offline gender norms. Subrahmanyam and Greenfield (2006) showed that online conversations amongst teenagers for whom gender information was readily available tended to be more sexualized, reflecting the offline patterns found by Brown (1990) and Feiring (1999).

There is much less research on other aspects of identity and how these influence presentation and engagement in online environments. Most of the studies on ethnicity again focus on social networking sites. For example, Hargittai's (2007) and boyd's (2011) studies suggests that social networking site use divides along ethnic lines where certain sites (i.e. MySpace) are used predominantly by certain (minority) ethnicities leading to 'white flight' to other sites such as Facebook. Tynes, Reynolds and Greenfield (2004) researched chat rooms and found that ethnicity is often brought up deliberately to engage with people from similar backgrounds or to establish norms for a conversation, replicating offline normative differences.

Social Identification and Deindividuation theories

The Social Identification and Deindividuation (SIDE) framework is a social-psychological framework that argues that social identity influences individuals' self-perceptions and behaviors according to social norms even in deindividuated interactions (Postmes et al. 1999, 2001). Self-categorization theory, on which SIDE builds, supposes that recognizing oneself as a member of a social group depends on awareness of a certain group as part of the self. Important within this social psychological framework is that identification with a group leads to behaviors and self-perceptions that conform to group norms (Hogg & Reid 2006; Elllmers, Spears & Doosje 2002; Verkuyten 2004; Verkuyten & Poulasi 2006).

Self-categorization is part of an automatic process whereby individuals continuously search for a social frame of reference in every context. SIDE poses that even in deindividuated contexts people shape their self-image and act upon these social identity cues. SIDE also postulates that social identity only has this effect on cognitions and behavior if there is affective commitment to the group (Ellemers, Kortekaas, & Ouwerkerk 1999; Postmes, Spears & Lea 1999), that is, if the social identity is important to the person in a certain interaction.

SIDE frameworks have been applied to explain the link between social identity and online interactions. Current models argue that interactive online environments in which the person is anonymous or deindividuised lead people to pay more instead of less attention to cues about social group membership, such as gender and education, as guides for behavior (Walther & Parks 2002; Yee & Bailinson 2007), this is in contrast to earlier assumptions about the equalizing effect of deindividuation (Culnan and Marcus 1991, Dubrovsky, Kiesler & Sethna 1991; Walther 1992). SIDE approaches to online interaction studies pose that these cues are used to determine which aspects of identity are most relevant, making a distinction between social and personal identity cues. Social identity cues refer to cues about relevant group identities, and personal identity cues to cues that draw attention to the individuals in the interaction (Lee 2006; Sassenberg & Broos 2003). Research in this area has shown that even in relatively anonymous online environments people behave according to social norms because they interact based upon the social status and expected behavior associated with the social identities they deduct from scarce social identity cues (e.g. Herring, 2004). In research with teenagers, Baumgartner, Valkenburg & Peter (2011) showed that peer norms influenced online sexual interactions in what can be considered deindividuated contexts.

Social identity and teenage identity shifts

SIDE based research often focuses on only one aspect of identity (mostly gender or fictional group identities) amongst adults and research about teen identity development in online interactions mostly looks at interactions with known others or at the content of the interaction in relation to one aspect of identity. The effects of teenagers' shifting identifications with different offline social identity categories, as opposed to the consistent effect of specific social identity categories or online depictions of the identity, on self-perceptions and behaviors are not widely examined. This paper hypothesizes that in online environments in which they are anonymous teenagers will use the most salient aspect of their social identity to guide how to think about themselves in online interactions (*H1a-c*) and to guide their partner selection behaviors (*H2a-b*).

The study presented in this paper is based on a two-tiered experiment in which the prominence of gender, ethnicity and generational aspects of identity are manipulated in an online environment. These experiments allowed for testing of the causal effect of identity prominence on teenagers' perceptions of their online self-confidence (part 1) and chat partner selection (part 2).

Experiment 1

Methodology

220 students from 15 secondary schools in the Greater London Area (UK) participated in the experiments. Since one of the areas of interest in the study was ethnicity, the schools were selected based on the ethnic make up of their student body. The final sample consisted of four schools with a majority of African Caribbean students, four schools with an Asian majority, three with a White majority and four with mixed ethnic composition[1]. The fieldwork for this experiment took place over a period of seven months (March-August 2006). The school environment in which the experiment took place was a familiar context of internet use for all young participants.

Procedure

All the participants were seated individually behind a computer in such a way that they could not influence or read each others' responses. A teacher or researcher was present to ensure that the experiment was completed in silence and without interaction between participants.

Figure 1 here

The first page framed the study by showing a short article that described differences in hours of internet use based on different socio-demographic categories (Fig 1. step 1). Participants had to scroll down to be able to click to the next page where they agreed to participate by giving a password assigned to their school.[2] The following page asked students demographic questions (age, gender, ethnicity, place of residence - Fig 1. step 2).

The participants were then presented with an explanation which varied for the different experimental conditions in which Youth, Gender, Ethnicity or Personal identity categories were primed (Fig 1. step 3).

After the priming, participants were asked to complete two searches related to human rights and health (Fig 1. step 4). The search results reinforced the first prime by offering ethnic, gendered or youth oriented sites as top search results.[3] They were then asked to select two chat partners (Fig 1. step 5 - Experiment 2 in this paper). The last part of the experiment collected information about participants' internet self-efficacy (Fig 1. step 6 - Experiment 1 in this paper) and about the level of affective commitment to different social groups.

Design

The experiment followed a 2 by 3 by 4 between subjects design ('gender' x 'ethnicity' x 'primed identity'). The two main explanatory factors were gender (male/female) and ethnicity (Asian/African Caribbean/White – collected at step 2, see Fig. 1). The third explanatory variable, 'primed identity' condition (see Fig.1 step 3), consisted of sites which

addressed the teenagers in different ways. This started with an explanation of the purpose of the experiment[4]:

- *Gender*: Teenager addressed as a member of a gender group (wording: to understand how 'men'/'women' use the Internet).

- *Ethnicity:* Teenager addressed as a member of an ethnic group (wording: to understand how 'African Caribbean'/'Asian' people use the Internet). Pilot research showed that addressing teenagers as 'White' was associated with the label 'Racist' and caused an adverse reaction in teenagers (see Author 2007). Therefore, the ethnic condition did not include the 'White' category.

- *Youth*: Teenager addressed with the category label 'Young people'.

- *Personal*: Teenager addressed in an individual manner using personal pronouns such as 'you' and 'people like you'.

The three main experimental primes were based on manipulations referred to as deindividuation or social identity primes in self-categorization and SIDE research (eg. Lee 2006, 2007). These were deindividualised since social and not personal identities were primed. The Personal condition in this experiment was based on what self-categorization research classifies as individuation, that is, no reference was made to an offline social category, the only reference was to the individual. A computer program based on software written specifically for this experiment randomly distributed the participants randomly over the Ethnicity, Gender, Youth and Personal conditions.

Table 1 here

The distribution of gender was relatively equal across the different conditions (Table 1, $M=45\%$ girls, 55% boys). Due to problems in recruiting African Caribbean participants, only mixed ethnic individuals were assigned to the Youth prime condition. Because there were fewer African Caribbean participants (16%), there was an overrepresentation of Asian

students in the Ethnicity condition (68%), but an equal distribution of White (41%) and Asian

teens (42%) in the Gender and Personal conditions.

Hypotheses experiment 1

The first set of hypotheses examines the relationship between social identity and

internet cognitions (ie. self-efficacy). The focus on internet self-efficacy is based on

research which shows that it is an important motivator for online interaction. Since a

person's internet self-efficacy is partly independent from their actual skills or

experience with using the internet (Durndell & Haag 2002; Hargittai & Shafer 2006;

McIlroy et al. 2001) it can be context dependent. The overarching first hypothesis

(H1) is that a person will adopt internet self-efficacy levels corresponding to that of

the social group they identify with at the time.

Figure 2 here

Figure 2 depicts the part of the experiment which investigated H1a through H1c. It

shows the predicted levels of self-efficacy (high or low) based on the experimental condition

the participant was assigned to. The conditions consisted of the priming of one of the social

categories (Gender, Ethnicity, or Youth) that make up the participants' social identity.

Gender

Women are consistently (self-) evaluated as less skilled when it comes to digital

engagement even when there actual skills are similar to those of men (Helsper 2010; Jackson

et al. 2001; Selwyn 2007). Therefore, the second self-efficacy hypothesis assumes differential

effects for boys and girls of gender awareness on self-efficacy, *H1a:* Girls have lower and

boys higher levels of internet self-efficacy when the gender aspect of their identity is

prominent than when the focus lies on a different aspect of their identity.

Ethnicity

US research shows that African–American minorities have lower self-efficacy levels and perceive their ethnic group to be less ICT skilled (Calvert et al. 2005; Stanley 2003), while UK based studies suggest that self-efficacy levels of African-Caribbean minorities in the UK are equal to those of the White majority (Ofcom 2006). Asian youth on the other hand have been consistently shown to have an advantage in internet self-efficacy, access, attitudes and use (Ofcom 2006; Stanley 2003).

Due to the inconsistency in the findings in relation to ethnicity, the following hypothesis is tentative, *H1b*: African Caribbean teenagers have lower and Asian teenagers higher levels of internet self-efficacy when their ethnic identity is prominent than when other social identities are prominent.

Youth

Both adults and children assume that young people are more skilled at using computers and other ICTs than adults (Facer & Furlong 2001; Tapscott 1999). Internet self-efficacy levels are high in young people even when they lack some of the skills needed to use technologies (Livingstone & Helsper 2007; Cheong 2008).

Therefore, *H1c:* Teenagers have high levels of internet self-efficacy when they are focusing on their youth as the most important aspect of their identity.

Measures Experiment 1

The first online confidence measure asked 'How good do you think you are at using the internet?' (scale 1 'beginner' through 4 'expert', M=2.82, SD=.79) and the second asked 'In general, how good do you think you are at using the internet, a lot worse, a bit worse, the same, a bit better or a lot better than other people?' (1 'a lot worse' through 5 'a lot better', M=2.49, SD=1.09).The measures were based on the UK Children Go Online measures of internet self-efficacy (Livingstone & Bober 2005, reported full scale α=.71, *item total correlation*=.49). The two measures were summed to construct a measure with a scale from 2

to 9 (from 'beginner' to 'expert', *M=*5.30, *SD*=1.16). This scale (*r*=.27, p<.001) was used to test hypotheses 1a through 1c.

Findings: Self-Efficacy

H1 hypothesized that teenagers have lower levels of internet self-efficacy when addressed (primed) as a member of a group which is perceived to have lower levels of self-efficacy. Table 2 shows the results of ANOVAs that tested whether this hypothesis (H1a) is supported for self-efficacy levels when comparing a Gender prime with Youth and Personal primes (i.e. Condition).

Table 2 here

Table 2 shows that there was no significant independent effect of the prime (Condition - C) on self-efficacy levels of teenagers when comparing the Gender with the Youth (Table 2[a]) and Personal (Table 2[b]) condition. Thus teenagers, boys and girls, had similar levels of self-efficacy whether they were addressed based on their gender, their age or in an individual manner.

There was a main effect of gender (A) on self-efficacy amongst the teenagers in the Gender and Youth conditions (Table 2[a]). The girls in the Youth and Gender conditions had lower self-efficacy levels (*M=*5.95, *SD=*1.11) than the boys (*M=*6.58, *SD=*1.57). These gender differences (A) did not appear when the analyses were conducted for teenagers in the Gender and Personal conditions (see Table 2[b]). In testing H1a the most important result is that the relation between gender and self-efficacy levels did not differ depending on how the teenagers were addressed (A x C). Because the prime had no effect, H1a had to be rejected.

Table 3 shows the results of ANOVAs that tested whether H1 is supported for self-efficacy levels in online interactions when comparing a prime (Condition) that emphasizes Ethnicity (ie. testing H1b) and comparing a prime (Condition) that emphasizes Youth (ie.

testing H1c) with one that does not emphasize any social identity category (Personal condition).

<div align="center">Table 3 here</div>

Table 3[a] shows there were no effects of ethnicity (B) or prime condition (C) when comparing the Ethnicity and Personal conditions. The hypothesized interaction effect between Ethnicity prime and ethnicity (B x C) on self-efficacy levels (see Fig. 2) was not significant, H1b was therefore rejected.

Table 3[b] shows there was a main effect of gender group (A) in the Youth and the Personal conditions. This replicates the findings of earlier comparison between gender and youth conditions (see Table 2[a]). Boys in the youth and control conditions had higher self-efficacy levels ($M=6.80$, $SD=1.85$) than girls ($M=5.86$, $SD=1.55$). In addition, there was an interaction between prime condition and gender (Table 3[b]).

<div align="center">Figure 3 here</div>

Figure 3 shows the interaction effect between condition and self-efficacy levels of boys and girls ($F_1=5.27$, $p=.02$). Although the boys on average had higher self-efficacy levels than the girls, there were no differences between the boys and girls when both were addressed personally. Boys were less confident when addressed as individuals (Personal prime) than when they were addressed as young people (Youth prime). Girls were as confident as boys when exposed to a personalized prime (Personal prime) but less confident when addressed as young people (Youth prime).

 The effect of addressing teenagers as young people was unexpected, since both boys and girls were predicted to have high self-efficacy levels in the Youth condition. H1c posed that teenagers have the highest levels of self-efficacy when their youth was the prominent aspect of their identity. Given that only the boys felt more confident when addressed as youth

than when they were addressed in a personalized way, these findings support H1c for boys but not for girls.

Discussion: Self-Efficacy

There was partial support for the first overarching hypothesis (H1) that priming of a social identity influences self-perceptions in relation to interactions with ICTs. Figure 4 gives an overview of the support found for the specific hypotheses about the relationship between social identity (group), awareness of an identity (condition) and perceptions of self (level of self-efficacy).

Figure 4 here

Boys were hypothesized to be more confident when addressed as boys or young people because earlier research shows that general norms related to gender and youth dictate that boys and young people should be better than girls and older people at using the internet. The relationship between offline identity and self-perception was in the expected direction for boys, that is they were most confident in those contexts where youth aspects of their identity were primed and least confident when none of their social identities was primed (partial support for H1c - see Figures 3 and 4).

When addressed as young people or based on their gender, girls had lower levels of self-efficacy in their online interactions than boys. This supports the traditional equalization argument in relation to CMC as discussed by Culnan and Marcus (1991), Walther (1992) and Dubrovsky, Kiesler and Sethna (1991), since the girls had the highest levels of self-efficacy in the Personal condition which did not prime any social identity aspect and thus there were no social identity cues or norms on which to base 'appropriate' perceptions of the self. Nevertheless, the effect of different identity primes within gender groups also supports the idea put forth by SIDE frameworks that in deindividuated (computer-mediated) environments teenagers will use the social cues available to them, in this case identity primes, to determine

how they think about themselves in interactions (Lea et al. 2001; Postmes et al. 1999, 2001). Thus, social context determines which offline identity aspect is most prominent which in turn determines how confident adolescents feel in online interactions.

Contrary to expectations, confidence levels between girls and boys were not statistically different in a condition that emphasized membership of a social group with presumed internet skill differences (Gender) but they were different in one (Youth) that supposedly emphasized high internet skills for both (rejection of H1a - Fig. 4). That girls had the lowest and boys the highest levels of self-efficacy in the youth condition can be understood if, by emphasizing their youth, teenagers were primed to use their peers instead of older generations as a comparator group. Social norms could proscribe that boys feel confident when they compare themselves with others in their peer group while for girls this could mean the reverse if gender effects are amplified in this condition. These findings counter others' (Jackson et al. 2001; McIlroy et al. 2001; Ono & Zavodny 2003; Selwyn's 2007) conclusions that women consistently perceive themselves as less skilled with ICTs than men. Instead, this study suggests that the way in which girls and boys are addressed changes how confident they feel in online interactions. Making girls focus on their individuality rather than on their gender identity increased their internet self-efficacy. This could potentially influence their participation in a world that is increasingly digital since high self-efficacy is linked to increased performance (Bandura et al. 1996; Bandura & Locke 2003; Livingstone & Helsper, 2010). The influence of identity awareness on teenagers' cognitions was only found for gender aspects of identity; ethnicity primes had no influence on the levels of internet self-efficacy of the different ethnic groups (rejection of H1b–Fig. 4).

Experiment 2

Part 1 of the experiment examined the effect of identity awareness on self-perceptions in online interactions. This section discusses the experiment which tested the effect of identity

awareness on online interaction behavior, in this particular case, on chat partner selection.

Gender seems to be an important aspect in the decision making process of who a young

person talks to in online environments but research is contradictory. Smahel and

Subrahmanyam (2007) found that although girls were more active in looking for romantic

partners in online settings boys were more likely to express their interest in the gender (ie.

female) of partners. Boneva et al. (2006) on the contrary found that teenagers independent of

their gender looked for opposite sex partners in instant messaging. Even less clear is what the

role of ethnicity is in online environments. In 'real life' environments peer groups are

generally similar in ethnicity and Matei and Ball-Rokeach (2001) showed that this is reflected

in the online social networks of Los Angeles residents. Since there has been little research on

the role of ethnicity in chat rooms and none in relation to how priming ethnicity or gender

determines communication partner selection amongst a group of strangers, the findings

regarding the influence of ethnicity cannot be compared or contrasted with earlier research.

Methodology

The sampling, condition assignation and the procedure were the same as in part one of

the experiment (Fig. 1). After the priming tasks, participants were directed to a fictional chat

room where a number of avatars were visible (Fig 1. step 5). They were asked to click on the

two avatars they might be interested in talking to. The chat page designed by the researcher

presented eight avatars; four male avatars on the left side and four female avatars on the right

side (see Fig. 5).

Insert Figure 5 here

Each avatar had a profile which included descriptions with names that were typical

White, Asian or African Caribbean names in the UK[5]. There were two avatars with fantasy

names and descriptions that placed them outside of this ethnic classification. After selecting

two partners, participants were asked why they picked the first character. The order of the

avatars was randomized within the left and right columns on the page. Participants were

asked to select two chat partners to control for primacy preferences for the top left corner

avatar. In addition, selecting two chat partners instead of one provided more variance in the

measure provided. Four scales were created based on this task all ranging from 0 (not chosen)

to 2 (both first and second choice). The 'female chat partner' scale indicated how often the

teenager selected a female chat partner ($M=1.21$, $SD=.78$) and the 'AS/AC/White/Neutral

chat partner' scale how often the teenagers selected, respectively, an Asian ($M=.79$, $SD=.68$),

African Caribbean ($M=.28$, $SD=.50$), White ($M=.46$, $SD=.58$) or 'Fantasy' ethnicity ($M=.48$,

$SD=.58$) chat partner.

Hypotheses

It seems that people mostly seek ties online with those that are of a similar background

and look for clues that might indicate this similarity (Ellison, Steinfield & Lampe 2007). The

second general hypothesis (H2) tested in this paper is that, if a particular social identity

category is prominent when selecting a chat partner from a group of unknown others, social

identity is used as a cue for selection. H2 was tested for identification with young people,

gender and ethnic groups (Fig. 6).

Figure 6 here

Fig. 6 depicts Hypotheses 2a and 2b which predict which chat partners teenagers from

different groups select based on the condition the participant is assigned to. The conditions

consist of the priming of one of the social categories (Gender, Ethnicity, Youth or Personal

conditions).

Gender

Self-categorization theory would argue that if a person's sexual identity is prominent

romantic motives will become more important in interactions with others. For young people

their gender is highly related to their understanding of sexuality and relationships (Author

2007). Therefore, *H2a*: Teenagers are more likely to select opposite sex (romantic) chat partners when they are aware of their gendered identity.[1]

Ethnicity

Matei and Ball-Rokeach (2001) showed that ethnic minorities, and in this case especially Asian groups, were likely to form ties with people from the same ethnic group even when there were opportunities to interact with others. When young people make friends online who are distant geographically, they tend to be socially similar and interest in absolute 'strangers' is minimal (Boneva et al. 2006; Mesch & Talmud 2007). Therefore, *H2b*: Teenagers are more likely to select same ethnicity chat partners when their ethnic identity is prominent.

Findings

Table 4 here

Table 4 indicates that identity priming (C) did not influence the gender of the chat partner selected. Since the gender of the chat partner selected did not vary according to how teenagers were addressed, H2a was rejected. However, there was a main effect of gender (A) on female chat partner selection (Table 4[a] and 4[c]). The girls were less likely to select a female chat partner than the boys in the Gender, Ethnic and Personal conditions.

Table 5 here

Table 5[a] shows that there were no identity or priming effects on the selection of Asian partners when Ethnicity and Personal prime conditions were compared. Thus the selection of an Asian chat partner was influenced neither by ethnicity (B) nor gender (A) of the participants nor by the prominence of these identities (C). In testing H2b the most important result is that the ethnicity of the chat partner selected did not differ depending on how the teenagers were addressed (B X C). Since there was no main or interaction effect of priming (C) on the ethnicity of the chat partner selected, H2b was rejected.

There was an, unexpected, significant main effect of gender (A) on the selection of African Caribbean chat partners (Table 5[b;c]); girls were more likely to select African Caribbean partners (*M*=.39, *SD*=.57) than boys (*M*=.18, *SD*=.41). In addition, there was a main effect of ethnicity on the selection of African Caribbean chat partners (Table 5[c]); the African Caribbean teenagers were more likely to select African Caribbean chat partners (*M*=.50, *SD*=.67) than the Asian teenagers (*M*=.19, *SD*=.40). No similar significant effects were found for the selection of White or Asian chat partners although the (non-significant) tendency was for the Asian teenagers to select Asian chat partners (*M*=.95, *SD*=.64) and the White teenagers to select White chat (*M*=.64, *SD*=.64) partners.

Controlling for affective commitment

Because affective commitment could account for a lack of significant results of identity priming (Ellemers et al. 1999, 2002), affective commitment was incorporated in both experiments at a second stage. Affective commitment was measured through the three part question: 'On a scale from 1 to 5, how important is it to you that you are a...?' The answers were given on three scales from 1 'very unimportant' to 6 'very important' and included a scale for gender (Woman/Man; *M*=4.11, *SD*=1.25), for ethnicity (Asian/African Caribbean/White person; *M*=3.78, *SD*=1.34) and for youth (Young person; *M*=3.80, *SD*=1.19). Since no measures for affective commitment related to gender, ethnicity or youth identities could be found in previous studies, these three measures were adapted from different measures of social and organizational affective commitment.

Affective commitment did not influence the findings for internet self-efficacy nor were effects found of affective commitment to ethnic identities on chat partner selection. Affective commitment to a gender aspect of the identity did influence the effect of priming on online communication behavior. This effect of affective commitment was found when a three-way interaction between gender (A), condition (C) and affective commitment (D) was

included in the analysis of the comparison between the Gender and Personal prime

conditions.

Table 6 here

Table 6 shows that affective commitment to gender (D) hides the effect of identity

priming (C) on female chat partner selection (absent in Table 4). When importance of gender

was controlled for (as in Table 6) the teenagers were more likely to select a female chat

partner in the gender (M=1.30, SD=.76) than in the control condition (M=1.00, SD=.80). In

addition, boys on average (M=1.33 SD=.76) were more likely to select female chat partners

than girls (M =1.07, SD=.79). Since the girls were more likely to select same sex chat

partners in the Gender prime condition, H2a has to be rejected for the girls (when affective

commitment is controlled for). However, since the boys were more likely to select opposite

sex partners in the gender condition, H2a cannot be rejected for the boys.

Discussion: Chat partner selection

In contrast to what was found for online self-perceptions (ie. self-efficacy), teenagers'

online behavior (ie. chat partner selection) was not clearly influenced by the activation of a

certain identity category (Fig. 7). Social identity categories such as gender and ethnicity had

an effect but this effect was consistent across identity primes and did thus not depend on

identity awareness, therefore H2 has to be rejected.

Figure 7 here

For chat partner selection offline identities such as ethnicity and gender had a

consistent effect independent of how they were addressed on the site. Overall, the preference

of both boys and girls was for female chat partners but it seems that boys were more likely to

select opposite sex-partners when gender aspects of identity were primed than when other

identity aspects were prominent. These findings on gender contrast earlier research by

Smahel and Subrahmanyam (2007) in which teenagers showed a preference for opposite sex

online communication partners. An explanation could be that there is a threat in opposite sex interaction with strangers for girls which is absent for boys and that girls are therefore more likely to contact same sex chat partners in anonymous online contexts. Similarly, offline identities based on ethnicity seemed to be important determinants of the ethnicity of the chat partner selected (Fig. 7). Teenagers, and especially African Caribbean adolescents, were consistently more likely to select chat partners from the same ethnicity confirming findings by Matei and Ball-Rokeach (2001), Tynes et al (2004) and boyd (2011) about ethnicity preferences online. These results reflect 'real life' environments in which peer groups are generally based on ethnicity and in which romantic relationships are very important (Blais et al. 2008; Smahel & Subrahmanyam 2007). It seems that deindividuation of the online communication environment does not 'free' teenagers from offline identity constraints and the associated group norms. Even when offered an alternative frame of reference teenagers still seek for partners of similar ethnic groups. The findings partially support SIDE theories which argue that in deindividuated contexts individuals rely on the cues available to make decisions about how to interact with others (Lea, Spears, & de Groot 2001) and against the equalization hypothesis put forth by early CMC research (Culnan & Marcus 1991) that online environments make offline social status characteristics less important. However, since this effect persists in individuated contexts and therefore contradicts SIDE theories, offering support for the importance of minority identity in influencing teenagers' online (and offline) behavior. Together the experiments suggest that the social context has a smaller influence on teenagers' behavior in online interactions than on their self-perceptions.

General discussion and conclusions

This paper set out to investigate the importance of offline social identity in teenagers' online interactions. In particular it tested how different levels of awareness of specific social identity categories (youth, ethnicity and gender) influenced teenagers' behaviors and self-

perceptions in online interactions. Most frequently studies take offline social identities as stable and examine how they (consistently) influence the content of online interaction. The findings presented here suggest that offline social group norms related to gender and ethnic identities influence how teenagers think about themselves in online interactive contexts and that the way in which they are addressed can change the importance of different identity aspects. Thus, this study confirms other research that shows that offline identities influence how teenagers see themselves and act online (e.g. Baumgartner et al, 2011; Livingstone, 2008) but expands this research by showing that what aspect of their identity is important in influencing cognitions and behavior depends on the social context.

The experiments presented in this paper supported SIDE and self-categorization theories (Ellemers et al. 1999; Lee 2006; Postmes et al. 2001; Verkuyten 2004) by showing that the effect of offline social identities on online cognitions can depend on which aspect of a teenager's identity is the most prominent. The findings argue against a stable effect of social identity such as that implied by some identity development theories, instead self-categorization and SIDE approaches seem more appropriate frameworks for teenagers since they include the idea of context dependency (Verkuyten 2004) and shifting identification. Partner selection seemed less context dependent than self-perceptions in online interactions.

The primes of different aspects of identity in this study could be divided into personalized and socially identifiable (Lea et al. 2001; Postmes et al. 1999; Sassenberg & Boos 2003). In relation to this, the findings suggest that the distinction between social identifiability (deindividuation) and personalization is more important in relation to self-perceptions than it is in relation to online interaction behavior. Even in relatively 'free' online contexts, identity play in interactions with others was restricted by cultural boundaries as Phinney (1989, 2000) suggested in her research on ethnic minorities. Ethnic identities were

more stable in their influence and less susceptible to identity awareness effects than gendered identities.

To a certain extent this is positive news for those concerned about understanding how young people meet strangers online. The selection of chat partners amongst a group of strangers was relatively predictable; it did not depend on the mode of address. Further research should introduce adult or older characters and examine these processes for groups, such as disabled or non-heterosexual teenagers, that are likely to have identity crises (ie. shifts) during adolescence and are vulnerable to grooming (Almond et al. 2006; Wolak et al. 2008).

Since this study was conducted, chat environments have changed. With the increasing popularity of social networking sites and online social worlds, anonymity or selective identifiability becomes more complex (Herring 2004). In most online environments the communicator builds on a broader virtual presence which serves as a warrant for the identity adopted online (Walther et al. 2008) and most interactions now take place with people who teenagers know offline (Mesch & Talmud, 2007; boyd & Elison, 2008). Nevertheless, chat remains popular on a text or avatar only basis and is a representative environment for the types of processes examined in this paper because it is one of the few online environments in which interactions with strangers are likely and where knowledge about offline identities is less readily available.

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Notes

[1.] The Asian (23%) and African Caribbean (25%) groups are the largest ethnic minority groups in the UK.

[2] Participants were asked to give their email address to participate in a raffle for a music voucher. The school had been informed in advance that this information would be treated confidentially and this was repeated on the website and in the verbal instructions

[3] These elements are nor discussed in this paper but described in detail by Author (2007)

[4.] Any comparison with the youth condition does not include a control for ethnicity because in the youth condition there was only one (White) ethnic group and thus no variance to be explained based on ethnicity.

[5.] Source: The two most popular names from the African Caribbean, Asian and British on http://www.babynameworld.com/ were selected. The names selected were recognized as typical Asian, African Caribbean and British names.