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Private message me *s'il vous plait*: Preferences for personal and masspersonal communications on Facebook among American and French students

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ABSTRACT

Facebook, a social networking tool used worldwide, provides affordances for public/masspersonal and private/personal communication. Based on previous cross-cultural research demonstrating that masspersonal communication is adaptive in individualistic cultural contexts, we hypothesized that using Facebook to broadcast messages to one's entire network would be relatively more common and appealing to people in countries with greater individualistic values. To test this hypothesis, data were collected in two Western countries differing in levels of individualism, France (204 women, 47 men) and the U.S. (75 women, 89 men), through questionnaires measuring their Facebook use. Results indicated that American college students had larger Facebook networks and used both more masspersonal and personal communication with acquaintances compared to French college students. Masspersonal communication was mediated by network size. French students used more personal communication with friends than American students, but this association was not mediated by network size. These findings suggest that the appeal of masspersonal communication increases as a function of social network size, however, level of engagement in personal communication on Facebook is a function of other cultural differences between the U.S. and France, such as differences in individualistic values.

1. Introduction

Facebook, a social networking site released at Harvard University in the United States at the turn of the millennium, introduced a novel ability for individuals to engage in a one-to-many style of masspersonal communication. Masspersonal communication on Facebook, defined as textual or audiovisual messages transmitted to one's entire social network (O'Sullivan, 2005), precisely exemplifies a form of universalistic exchange that Triandis, Bontempo, Villareal, Asai, and Lucca (1988) long ago argued are more common in individualistic cultures. Universalistic exchanges involve information or resources that can be sent or applied to many different people. These are opposed to particularistic exchanges such as personal favors or messages targeted to a specific person, which would be more common in less individualistic cultures. Triandis et al. (1988) suggest that in relatively more individualistic cultures, social networks tend to be larger and more spread out such that it is more efficient to manage relationships with generalized resources. In contrast, when social networks are smaller, more tightly-knit and permanent, social conditions typical in less individualistic societies, individuals prefer one-to-one private exchanges that are generated for specific individuals. Facebook provides an ideal platform for studying particularistic exchanges and universalistic exchanges internationally because it has worldwide appeal (3rd most popular website in the world, Alexa, 2016) and provides separate features for each type of communication. For example private messaging, or personal communication, can be considered particularistic communication as it is only directed toward and valued by the recipient. Other masspersonal features such as status updates, comments and posting photos or news stories, can be considered universalistic exchanges as they are directed to and have potentially equal value to all the members of one's Facebook network.

In the U.S., researchers have found that Facebook users frequently adopt masspersonal communication strategies and as a

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result have greater life satisfaction, social support, and levels of social capital (Ellison, Steinfield, & Lampe, 2011; Forest & Wood, 2012; Manago, Taylor, & Greenfield, 2012). These results indicate that masspersonal use is common and adaptive in the highly individualistic society of the U.S. However, less is known about how users in less individualistic societies make use of these features to maintain relationships with their Facebook friends. Therefore the goal of this study was to apply the concepts of universalistic and particularistic exchanges to masspersonal and personal communication on Facebook and examine whether preferences for these forms of communication differ among Facebook users in Western countries that vary in degrees of individualism.

In this study, Facebook was conceptualized as a *cultural import,* defined as an idea or product created in one culture and transported to other cultures (Lull, 2000; Tomlinson, 1991; 2006). Given the ease with which one can use Facebook to broadcast messages to networked publics, it is perhaps no surprise that the tool was developed in the U.S., the most individualistic country in the world (Hofstede, 2001). However, as Facebook is exported to other cultures, it is likely to be interpreted and adapted to local contexts. The technological affordances of Facebook for communicating with expansive social networks may be eschewed in favor of Facebook's private messaging tools, which may resonate with norms, preferences, and values for more intimate, particularistic communication in less individualistic cultures. In order to isolate the association between degree of individualism and preference for particularistic, or one-to-one communication versus universalistic, or one-to-many communication, it is useful to examine Facebook usage differences among users Western countries that are similar in many other respects. In the current study French and American[1] university students' masspersonal and personal communication on Facebook was examined to test whether individuals in France, a less individualistic country than the United States according to Hofstede (2001), will use masspersonal communication less frequently and private communications more frequently than individuals in the U.S.

1.1. Cultural differences between France and the U.S.

Cross-cultural researchers have long been concerned about simple generalizations and subsequent comparisons of the "the West versus the rest" (e.g. Hermans & Kempen, 1998, p. 1111). Although comparing two cultures with extremely different cultural and historical heritages can be informative, the simple dichotomy of the West versus all other countries hides cultural nuances and makes the dangerous assumption of homogeneity across Western and Eastern cultures when in fact these cultures may have varied cultural practices and values (Hermans & Kempen, 1998). In his decades-long study of culture, Hofstede (2001) demonstrated the cultural diversity of the West and observed large differences in many different cultural variables between Western countries. One example is a twenty point difference in individualism values between France and the United States (70 and 90, respectively, on a scale from 0 to 90; Hofstede, 2001). It is interesting that although France and the U.S. have similar sociodemographics such as high enrollment in primary school, a small rural population, and high internet diffusion (The World Bank Group, 2016a,b,c), differences in levels of individualism are still observed between them. Additionally, Facebook is the most popular social networking site in the U.S. (Pew Research Center, 2015) and in France (Médiamétrie, 2015) with over 70% of young adults using the site in both countries. Therefore a comparison between these two countries can help illuminate how Facebook users in similar Western countries with differing levels of individualism take advantage of opportunities to use masspersonal communications with the integration of new communication tools in their societies.

1.2. Social relationships in France and the United States

The lower level of individualism in France compared to the U.S. is reflected in the ways that French people relate to one another. For example, French individuals have been described as having an autonomous-related view of the self (Kagitçibasi, 2005) due to parenting practices which focus on both a child's competence and emotional closeness with parents (Suizzo, 2002; 2004), whereby they have a strong emotional attachment to their family and friends but also greatly value personal choice. American individuals have a more autonomous view of the self (Kagitçibasi, 2005) due to parenting practices that focus on independence (Suizzo, 2002; 2004), which leads to less emotional dependence on their relationships and higher values for personal choice. In the same vein, Carroll (1988) noted in an extensive cultural comparison study of France and the U.S. that the French develop their personal identities in the context of social groups that provide protection and security, whereas American individuals forge personal identities through more independent explorations of multiple social groups. French people exhibit lower levels of interpersonal trust with society members at large than American individuals in their responses on the World Values Survey (Inglehart, 1997), which is likely linked to their lower levels of individualism and autonomous-related view of the self. These traits suggest that French people place higher value on their proximal in-groups made up of close friends and family than American individuals. Typically in cultures where people make greater distinctions between in-groups and out-groups, they are less willing to communicate with out groups made up of socially distant acquaintances as Gudykunst et al. (1992) observed in their study comparing communication practices in the U.S., Australia, Hong Kong, and Japan. Conversely, American individuals' higher levels of interpersonal trust, greater individualism, and autonomous view of the self lead to less dependence on and emotional closeness with their in-group. Given these differences, and the tendency for American individuals to have larger social networks (Cho, 2010; Wheeler, Reis, & Bond, 1989), American individuals are more open to communicating with acquaintances and less focused on communicating with close friends.

1.3. Individualism and Facebook network size

In a highly individualistic society where close local and familial ties are limited (Greenfield, 2009), having an expansive network becomes adaptive. Under these conditions, in-groups have weaker ties between members partly because they cannot be counted on to provide the same levels of support as an in-group in a less individualistic society (Triandis et al., 1988). Therefore having a diverse network, in which different relationships provide varied resources, becomes important to allow individuals to have access to emotional or material social resources without greatly taxing any one relationship.

Researchers have found support for the idea that people have more social contacts in highly individualistic societies in both face-to-face contexts and online. For example, Wheeler et al. (1989) measured face-to-face interactions in China and the U.S. through a daily diary method and found that U.S. participants had a larger number face-to-face interaction partners than Chinese participants. In other words, American participants reported speaking to a larger number of different people throughout the day than Chinese

[1] Throughout the text, the term "American" is used to refer to individuals in the US.

participants. Additionally, Cho (2010) found that American users had more Facebook friends than Korean Facebook users. Furthermore, Abbas and Mesch (2015) found that higher relative levels of individualism in Arab countries were associated with desiring to expand one's Facebook network. It was predicted therefore that higher individualism would be associated with larger networks, such that American students, who are more individualistic than French students (Hofstede, 2001), will have larger Facebook networks than French students.

1.4. Masspersonal communication on Facebook

As social networks become larger, time efficient techniques for managing these relationships become more important. For example, Wheeler et al. (1989) found that U.S. individuals were able to communicate face-to-face with a larger number of individuals by spending less time on each interaction than Chinese individuals. Another way to reduce the cost of interacting with a large network is to use *universalistic exchanges,* rather than *particularistic exchanges* (Triandis et al., 1988). In universalistic exchanges the same message is sent to many people at the same time and can be used multiple times, thus rendering them a more time efficient way to communicate. In comparison, particularistic exchanges occur between only two people and cannot necessarily be transferred to other contexts.

Facebook provides affordances that are extremely effective at reducing the cost of maintaining a multitude of connections because it allows users to send universalistic messages. Specifically, the tools on Facebook used for posting status updates and posting information such as photo albums, profile posts, or comments that can be viewed by one's entire network are examples of messages that are universalistic. This type of universalistic communication about personal traits or relationships has been described as *masspersonal communication* (O'Sullivan, 2005), which refers to disclosing personal information to an audience of others. Masspersonal communication requires much less time and effort than communicating with each person in one's network individually, and researchers have found that although masspersonal communication may appear to be simply a performance for one's network, it is typically aimed at maintaining relationships and garnering social support (Forest & Wood, 2012; Manago et al., 2012; Smock, Ellison, Lampe, & Wohn, 2011). Indeed, masspersonal communication seems to fulfill these goals as Manago et al. (2012) found that in the highly individualistic society of the U.S., having more Facebook friends, using more masspersonal communication (in this study, status updates which are posted on one's wall and seen by one's entire network), and having a larger audience for one's masspersonal communication was associated with higher satisfaction with life. Additionally, Forest and Wood (2012) found that in the U.S., posting status updates to one's entire network requesting support could be an effective way to garner social support if the requests for support were not made too frequently.

Furthermore, several cross-cultural Facebook studies have provided support for the association between individualism and differences in communication practices on Facebook. For example, Baker and Ota (2011) found that American participants were more likely to post public expressions of closeness to their entire Facebook network than Japanese users of the social network site Mixi. Furthermore, highly individualistic American individuals are more likely to post photos accessible to their entire network than less individualistic Indian individuals (Marshall, Cardon, Norris, Goreva, & D'Souza, 2008). Differences in Facebook communication style also exist within Western countries differing in degree of individualism. Researchers found that compared to American students, German students posted fewer of what they termed "compromising photos" that included potentially embarrassing or highly personally information to their Facebook profiles (Karl, Peluchette, & Schlaegel, 2010). Additionally, when comparing social network users in the U.K., a more individualistic country, to users in France, French participants report less self-disclosure on the site (Posey, Lowry, Roberts, & Ellis, 2010). Self-disclosure is a key feature of masspersonal communication as the information posted can be viewed by one's entire social network. Thus, it was hypothesized that U.S. Facebook users would engage in more masspersonal communication than French users because of a norm for self-disclosure as a cost-effective communication strategy useful for maintaining their expansive networks of friends and acquaintances. Additionally, it was predicted that the between country differences in masspersonal communication will be at least partially mediated by network size, so that both French and American Facebook users with large networks will use more masspersonal communication than Facebook users from either country with a smaller network, as a way to easily stay in touch with their numerous contacts.

1.5. Personal communication on Facebook

Masspersonal communication can be contrasted with communication that involves disclosing to a single individual. This type of communication can be performed on Facebook through private messaging which offers users the opportunity to communicate privately via chat with one person. Private, personal communication is more costly than masspersonal communication because it is conducted with one other person and is therefore a more selective process. The costliness of personal communication poses less of a problem in less individualistic societies because people can have their needs met by a smaller group of close others and therefore do not need to maintain expansive networks (Greenfield, 2009; Triandis et al., 1988). This means that users in less individualistic societies will be more focused on maintaining and communicating with fewer, close relationships rather than an expansive network of heterogeneous ties of both friends and acquaintances. Maintaining close ties, however, requires maintaining emotional intimacy. Personal communication seems to serve this purpose. For example, Valkenburg and Peter (2011) showed that using private chat to communicate with friends was associated with higher levels of intimacy in adolescent friendships. Additionally, Hu, Wood, Smith, and Westbrook (2004) found that the amount of instant messenger communication between friends was positively associated with their verbal, affective, and social intimacy.

Several cross-cultural studies have found evidence that users of Facebook from less individualistic countries prefer to communicate privately with a smaller number of Facebook contacts. For example, Baker and Ota (2011) found that Japanese social network users preferred to privately express closeness with friends on Mixi whereas American users preferred more public expressions of closeness diffused on Facebook. Additionally, researchers who conducted focus groups in the U.S. and Namibia, found that Namibian college students, who have less individualistic values, were more likely to view Facebook as a tool for privately chatting with friends than U.S. college students (Peters, Winschiers-Theophilus, & Mennecke, 2015). In the same vein, researchers found that lower individualism was correlated with concerns about privacy which was associated with preferring the use of instant messenger over other methods of communication (Lowry, Cao, & Everard, 2011). Furthermore, Abbas and Mesch (2015) found that higher levels of uncertainty avoidance, a trait associated with lower individualism, were associated with using Facebook to communicate mainly with close friends. Based on these studies, it was hypothesized that French students will use more personal

communication than American students, but only to communicate with friends and not acquaintances due to their smaller networks and the value they place on close relationships. Additionally, it was predicted that the use of personal communication will be mediated by networks size, as French students' smaller Facebook networks permit them to spend more time and effort cultivating close relationships through time intensive private messaging as opposed to U.S. students who have larger networks to maintain.

1.6. Overview and hypotheses

In order to better understand how people from two Western countries with differing levels of individualism might use Facebook in varied ways, Facebook use data were collected from first-year college students in France and the U.S. via questionnaires. Questions concerned how students use masspersonal and personal Facebook functions to communicate with friends and with acquaintances. Masspersonal communications included posting a status update, comment, or photo for one's entire network to see and personal communications included sending private instant messages to a single individual.

(H1) It was predicted that due to their higher level of individualism, American students will have larger Facebook networks than French students. (H2a) It was also hypothesized that due to their larger networks, American students will use more masspersonal communication to exchange messages with both friends and acquaintances than French students, (H2b) and that the between-country differences will be partially mediated by networks size. (H3a) It was predicted that French students will use more personal communication with friends than American students due to their lower levels of individualism, (H3b) and that the between-country differences in personal communication will be mediated by network size.

2. Method

2.1. Participants

2.1.1. French sample

Two hundred sixty first-year students (204 women, 47 men, 9 unreported, $M_{age} = 17.77$, $SD_{age} = 4.13$) were recruited from a medium-sized university in the Brittany region of France. Participants were recruited in first-year psychology classes and asked to participate in the study of their own volition for no compensation (as is standard practice in France where remuneration of students is not permitted). Ninety-four percent of French students reported using privacy settings on their Facebook account. Approximately 95% of French students reported having used Facebook for at least 3 years. Most French students (50%) logged on between 1 and 5 times per day.

2.1.2. American sample

One hundred sixty-six first-year students (75 women, 89 men, 2 unreported, $M_{age} = 18.59$, $SD_{age} = 3.73$) were recruited from a medium-sized university in the pacific northwest of the United States. Participants were recruited from first-year psychology classes. Compensation for their participation was offered in the form of research credits. Seventy-seven percent of American students reported using privacy settings on their Facebook account. Approximately 96% of the American students reported having used Facebook for at least 3 years. Most American students (47%) also logged on between 1 and 5 times per day.

2.2. Measures

2.2.1. Facebook network size

Participants were asked to report their current number of Facebook friends. Research has shown that participants are fairly accurate in estimating their number of Facebook friends (Burke, Marlow, & Lento, 2010) therefore it is appropriate to use a self-report measure of this variable.

2.2.2. Personal and masspersonal Facebook use

The Facebook use questionnaire was constructed by the first author. Items were based on the list of Facebook features delineated by Smock et al. (2011): status updates, comments, wall posts, private messages, and instant messages. In order to aid participants' recall of their Facebook activities the comments feature was divided into comments on status updates, comments on photos, and responding to others' comments. In addition, we distinguished between wall posts on participants' own profiles and on their friends' profiles. The questionnaire asked how students use the different Facebook features to communicate with four different types of individuals: high school friends, high school acquaintances, university friends and university acquaintances. For example a sample item measuring masspersonal communication with a friend is: "I stay in touch with a (high school friend) by commenting on his/her photos." A sample item measuring personal communication with an acquaintances is: "I stay in touch with a (university acquaintance) by sending him/her a Facebook message" (see Appendix A for a list of all items). For each item, participants were asked to indicate how often they used each of the Facebook communication functions (1 = never, 7 = daily). The personal Facebook use activities included Facebook chat, similar to instant messenger, and Facebook messages, similar to email. The masspersonal Facebook communication activities were posting status updates, posting to their own page, commenting on status updates or photos, replying to a friend's comments, and posting a message on a Facebook friend's wall. The original four relationship categories were collapsed into two groups: friends (the average of high school and university) and acquaintances (the average of high school and university).

2.3. Translation of measures

All questionnaire items were originally in English. The first author and a committee of three French research assistants translated all items into French. Then, a professional translator was consulted to back translate the French version of the questionnaires into English. The back translated items in English were then checked against the original items in English for equivalence of meaning. The back translation showed acceptable equivalence of meaning across the English and French versions of the questionnaires.

2.4. Procedure

Participants in France and the U.S. were recruited from first-year introductory psychology classes during the fall semester. In France, questionnaires were distributed at the beginning of an introductory psychology class to students who indicated that they had a Facebook account. Students were informed that they had the right to refuse participation if they wished. French research assistants then entered the data in an electronic data file. In the U.S., an announcement for the study requesting first-year students with Facebook accounts was placed on the university's online participant recruiting platform. Students who indicated via the online platform that they would like to participate were then asked to

report to the laboratory on a specific day and time to complete the questionnaires. The U.S. data were entered in an electronic data file by a U.S. research assistant who then sent the data file to the researchers in France who merged the two data files for data analysis.

2.5. Data analysis plan

To compare country and relationship differences in masspersonal (H2a) and personal (H3a) Facebook communication two 2 × 2 mixed ANOVAS, one for masspersonal communication and one for personal communication, were conducted. In each ANOVA relationship type (friend and acquaintance) was a within subject variable as all participants responded to these questions. Country (France and U.S.) was a between subjects variable.

To test the mediation hypotheses (H2b, H3b), analyses were conducted in SPSS using PROCESS, a macro for SPSS which uses the least ordinary squares method to test the model coefficients (Hayes, 2013). Confidence intervals were constructed using the 95th percentile.

Due to the large numbers of Facebook friends reported, the square root of the number of Facebook friends (M = 18.18, SD = 6.60) was used in order to obtain meaningful regression coefficients in the mediation analyses. Countries were dummy coded (France = 0, U.S. = 1). The averaged masspersonal communication for friends and acquaintances was used to make an overall masspersonal communication Facebook use variable to test Hypothesis 2b. Additionally, the averaged personal communication for friends and acquaintances was used to make an overall personal communication Facebook use variable to test Hypothesis 3b.

3. Results

3.1. Analysis of Facebook network size

Before conducting the analysis we examined the normality of both the U.S. and France number of Facebook friends variable. The U.S. data were positively skewed (9.55) and kurtotic (108.97). The France data were also positively skewed (1.31) and kurtotic (2.89). An examination of the data suggested that removing several extreme outliers could ameliorate the shape of the distribution. To select the criterion for data points to keep in the analysis a median absolute deviation was calculated (Leys, Ley, Klein, Bernard, & Licata, 2013). Removing outliers based on the median absolute deviation is preferable to using the standard deviation because the median is not influenced by outliers. Based on the median of the U.S. sample, a criterion for keeping scores ranging from plus or minus three median absolute deviations from the median was calculated ($-439.56 < X < 1339.56$). Based on the median of the France sample, a criterion for keeping scores ranging from plus or minus three median absolute deviations from the mean was calculated ($-194.78 < X < 694.75$). The data were normally distributed once the outliers had been removed. (For the U.S. sample, skew = 0.67, kurtosis = −0.19. For the France sample, skew = 0.65, kurtosis = 0.13). An independent samples *t*-test with equal variances not assumed showed that American students reported a greater number of Facebook friends ($M = 487.72$, $SD = 289.23$) compared to French students ($M = 262.20$, $SD = 135.80$), ($t\ (203.74) = -9.18$, $p < 0.001$), as predicted in Hypothesis 1.

3.2. Comparing masspersonal communication between France and the U.S.

A 2 × 2 mixed ANOVA was conducted on masspersonal communication comparing relationship type and country. Cell means and standard deviations are reported in Table 1. There was a main effect of relationship type, $F\ (1, 368) = 425.81$, $p < 0.001$, $\eta^2 = 0.54$. Participants engaged in more masspersonal communication with friends than acquaintances. The main effect of country was also significant, $F\ (1, 368) = 14.36$, $p < 0.001$ $\eta^2 = 0.04$. American students used more masspersonal communication than French students, however this main effect was qualified by the two-way Country × Relationship interaction which was also significant, $F\ (1, 368) = 11.33$, $p = 0.001$, $\eta^2 = 0.03$.

Table 1
Cell means for masspersonal communication 2 × 2 ANOVA.

Country	Masspersonal communication					
	Friend		Acquaintance		Total	
	M	SD	M	SD	M	SD
France (n = 210)	2.41	0.94	1.45	0.57	1.93	0.70
US (n = 143)	2.61	1.19	1.92	1.01	2.27	1.02
Total (N = 353)	2.49	1.05	1.64	0.80		

Note. M = mean; SD = standard deviation.

To better understand the effects of the two-way interaction, post-hoc mean comparisons were conducted, using a Bonferroni correction with p at 0.05 to reduce Type 1 errors (threshold for significance $p < 0.0125$). A graph of the cell means for personal communication can be seen in Fig. 1. Standard deviations, cell means, total means, and the number of participants can be found in Table 1. Independent samples t-tests were used to test for between country differences. There was no significant difference in how much masspersonal communication American and French students used with friends, $t\ (390) = -1.86$, $p = 0.064$. American students, however, used more masspersonal communication with acquaintances than French students, $t\ (393) = -5.81$, $p < 0.001$. Paired samples t-tests were used to test differences between communication with friends and acquaintances within each country. Both French ($t\ (237) = 24.80$, $p < 0.001$) and American ($t\ (162) = 9.17$, $p < 0.001$) students used more masspersonal communication with friends than with acquaintances.

In summary, Hypothesis 2a was partially supported. Indeed, American students used more masspersonal communication with acquaintances than French students, but there was no difference between American and French students in how much masspersonal communication they used with friends. Additionally, results indicated that both French and American students used more masspersonal communication with friends than acquaintances.

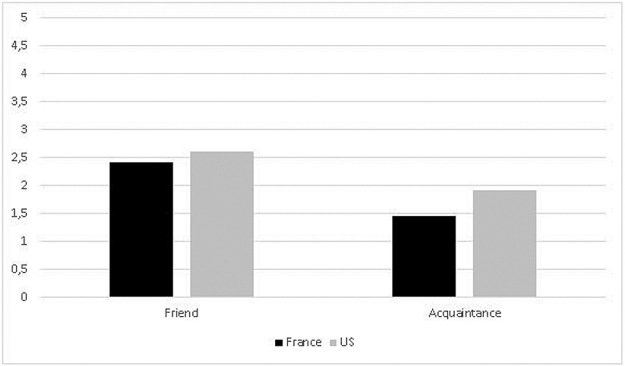

Fig. 1. Bar graph of cell means for masspersonal communication.

3.3. Mediation model for masspersonal communication

A simple mediation analysis using ordinary least squares path analysis was used to examine whether network size mediates the effect of country on masspersonal Facebook communication. Results indicated that country indirectly influenced masspersonal Facebook communication through its effect on network size. As can be seen in Fig. 2, American participants had larger networks than French ($a = 5.491$, $p < 0.001$) and participants with larger networks used more masspersonal communication ($b = 0.030$, $p < 0.001$). A bias-corrected bootstrap confidence interval for the indirect effect ($ab = 0.163$) based on 1000 bootstrap samples was entirely above zero (0.083–0.274). Country did not influence masspersonal Facebook communication independent of its effect on network size ($c' = 0.164$, $p = 0.086$). These findings support hypothesis 2b.

3.4. Comparing personal communication between France and the U.S.

A 2 × 2 mixed ANOVA was conducted on personal communication comparing relationship type (friend v. acquaintance) and country (France v. U.S.). The main effect of relationship type, $F(1, 399) = 540.75$, $p < 0.001$, $\eta^2 = 0.58$ and Country, $F(1, 399) = 8.16$, $p = 0.005$ $\eta^2 = 0.02$ were significant. However these main effects were qualified by the two-way Country × Relationship interaction which was also significant, $F(1, 399) = 107.10$, $p < 0.001$ $\eta^2 = 0.21$.

To better understand the effects of the two-way interaction post-hoc mean comparisons were conducted with a Bonferroni correction with p at 0.05 to reduce Type 1 errors (threshold for significance $p < 0.0125$). A graph of the cell means for personal communication can be seen in Fig. 3. Standard deviations, cell means, total means, and number of participants in each population can be found in Table 2. Independent samples t-tests were used to test between country differences. French students used more personal Facebook communication with friends than American students, $t(409) = 6.98$, $p < 0.001$. American students, however, engaged in more personal communication with acquaintances than French students, $t(410) = -3.15$, $p = 0.002$. Both French ($t(222) = 19.75$, $p < 0.001$) and American ($t(146) = 10.57$, $p < 0.001$) students used more personal communication with friends than with acquaintances. In summary, these results indicate French students use more personal communication with friends than American students, and American students use more personal communication with acquaintances than French students. These findings support hypothesis 3a.

3.5. Mediation model of personal communication

A simple mediation analysis using ordinary least squares path analysis was used to examine whether network size mediates the country's effect on personal Facebook communication (see Fig. 4). In this analysis results indicated that network size acted as a suppressor variable. A suppressor variable conceals the true relationship between two variables so that the true strength of the relationship between the variables is only evident when the suppressor variable is entered into the model (Warner, 2013). As can be seen in Fig. 4, the direct effect of country with the mediator in the analyses ($c' = -0.487$, $p < 0.001$) was stronger than the direct effect without the mediator included in the analyses ($c = -0.333$, $p = 0.003$). A suppressor variable in the model makes interpretation of the indirect effect inappropriate. Network size most likely acts as a suppressor variable in this case because it explains part of the variance in personal communication which is unrelated to the variance explained by country. When the unrelated variance associated with network size is partialed out, there is a smaller amount of variance in personal communication to be explained, which means that the proportion of variance explained by country is larger, and thus results in a stronger correlation. In other words,

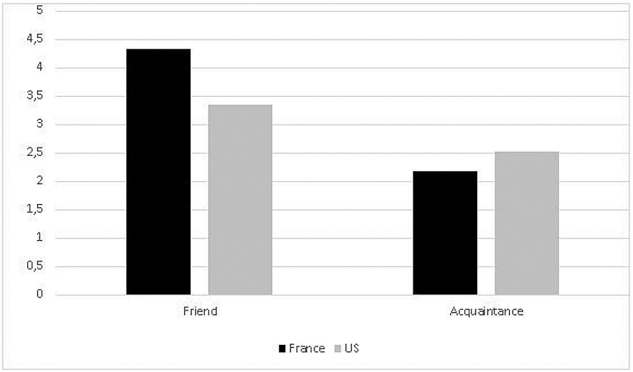

Fig. 3. Bar graph of cell means for personal communication.

Table 2
Cell means for personal communication 2 × 2 ANOVA.

Country	Personal communication					
	Friend		Acquaintance		Total	
	M	SD	M	SD	M	SD
France (n = 210)	4.34	1.32	2.19	1.07	3.27	1.00
US (n = 143)	3.35	1.55	2.53	1.24	2.94	1.23
Total (N = 353)	3.94	1.50	2.33	1.15		

Note. M = mean; SD = standard deviation.

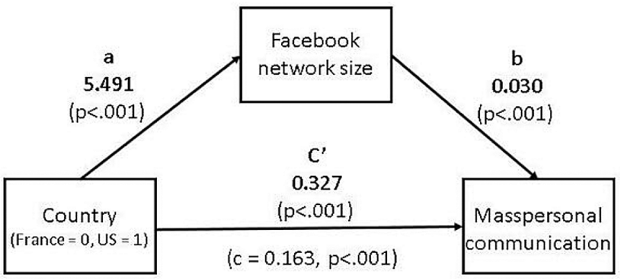

Fig. 2. Mediation model for masspersonal communication predicted from country and Facebook network size.

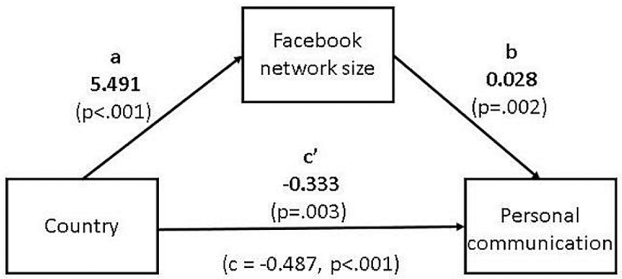

Fig. 4. Mediation model for personal communication predicted from country and Facebook network size.

when controlling for network size, country has a stronger effect on personal Facebook communication. For example, when comparing a French student and an American student with the same sized Facebook networks, the French student is more likely to use more personal Facebook communication than the American student. This finding is contrary to hypothesis 3b; network size did not mediate the relationship between country and personal communication on Facebook.

4. Discussion

This study was designed to examine whether college students in two Western countries with differing relative levels of individualism use Facebook in varied ways. The first variable of interest was Facebook network size, as measured by the number of Facebook friends American and French students reported. As predicted, the present findings revealed that American students had larger networks than French students. In fact, American students had almost double the number of Facebook friends than French students. This finding is consistent with several cross-cultural theories which posit that people in more individualistic societies have expanded social networks (Greenfield, 2009; Triandis et al., 1988). It is also consistent with studies that have shown that people living in the highly individualistic U.S. have more face-to-face interaction partners (Wheeler et al., 1989) and more Facebook friends online (Cho, 2010) when compared to less individualistic East Asian countries. The present study furthers this line of research by showing that Facebook network size differs as a function of relative levels of individualism within Western countries, as identified by Hofstede (2001). This finding also supports results of a recent study (Abbas & Mesch, 2015) that found greater individualism among Facebook users in Arab countries was associated with a desire to expand their online social networks.

4.1. Masspersonal communication on Facebook

In addition to the gross measure of network size, users' patterns of masspersonal and personal communication with friends and acquaintances on Facebook were examined. Results indicated that Facebook users in both countries use more masspersonal communication with friends than acquaintances. Indeed, previous research on Facebook use has found that the social networking site is more frequently used to stay in contact with friends than acquaintances (Manago et al., 2012). This may be further evidence that masspersonal messages can be used as a way to garner social support (Forest & Wood, 2012), and users are more likely to seek support from friends than acquaintances. In addition, social network users in the U.S. exchange public commentary with close friends in order to demonstrate to their entire network that they are well-liked and socially successful (Manago, Graham, Greenfield, & Salimkhan, 2008; Walther, Van Der Heide, Kim, Westerman, & Tong, 2008). A second finding, in keeping with the predictions, was that American students use more masspersonal communication with acquaintances than French students. American students' larger Facebook networks may necessitate their use of masspersonal communication to stay in touch with their considerable number of Facebook friends. Indeed, sending a single message to one's entire network to stay in touch with acquaintances is much less time consuming than sending private messages one-by-one to approximately 500 Facebook friends.

Perhaps as Triandis et al. (1988) suggested, universalistic exchanges become a necessity in highly individualistic societies where people have broad, diverse social networks.

Indeed, results of the current study indicated that network size fully mediated the effect of country on masspersonal Facebook use—American students have more Facebook friends and in turn use more masspersonal communication. In other words, country is associated with the size of one's Facebook network which is associated with engagement in masspersonal communication, among individuals in both France and the U.S. Thus, it was observed that masspersonal communication, as Triandis et al. (1988) predicted, may be well-suited to a context where individuals' networks are broad and heterogeneous. Furthermore in the communications literature, Rainie and Wellman (2012) have described relating to others through large, diverse networks as *networked individualism*. They recount how technology users navigating *networked individualism* are adept at making use of masspersonal communication strategies online, such as blogs and email lists, to grow, maintain, and draw support from their networks in times of need. In the current study, we also observed this phenomenon as social network size was a stronger predictor of masspersonal communication on Facebook than country. This may suggest that masspersonal communication is a behavior that is readily adopted to manage large social networks across cultural contexts.

4.2. Personal communication on Facebook

Both American and French students used more personal communication with friends than with acquaintances. This finding extends the media multiplexity theory (Haythornthwaite, 2005) to Facebook. This theory states that people in close relationships add new forms of communication media to stay in touch more easily and maintain intimacy. As predicted, French students use more personal communication with friends compared to American students. This finding may point to the greater importance of having fewer and maintaining closer relationships in the less individualistic culture of France. French students may show their value for these close relationships by using the time-intensive method of sending private, personal Facebook messages to communicate with friends. Results indicated that American students use more personal communication with acquaintances than French students. This result is in line with findings that American individuals receive equal levels of social support from Facebook contacts regardless of their level of relational closeness (Rozzell et al., 2014). This suggests that American individuals may be seeking out support from acquaintances as well as friends on Facebook.

Triandis et al. (1988) predicted that more universalistic exchanges, associated with larger social networks, could put a limit on how much time one has to engage in personal communication. To test this idea, mediation analyses using network size as a mediator of the effects of culture on personal communications via Facebook were conducted. Network size did not, however, mediate the influence of culture on personal communication. In fact, French students use more personal communication than American students even when holding network size constant. Consequently, when comparing a French and American student with the same sized network, the French student uses more personal communication than the American student. These findings suggest that, although French Facebook users will adopt masspersonal communication behaviors as their social networks get larger, they do not abandon intimate, particularistic exchanges.

4.3. The differing functions of masspersonal and personal communication on Facebook

It is interesting that these findings are not consistent with all the predictions of Triandis et al. (1988) about network size and universalistic (masspersonal) and particularistic (personal) exchanges. Although network size did mediate the between country differences in the amount of masspersonal communication, it did not

mediate the between country differences in the amount of personal communication. The difference in these mediation models may be due to the fact that masspersonal and personal communication serve different but not opposite relational needs. Masspersonal communication seems to serve the goal of staying in touch with a broad, diverse network of Facebook connections. Personal communication may serve the purpose of building and maintaining intimacy with a small group of close friends.

People in individualistic societies may prefer maintaining a large Facebook social network (Manago & Vaughn, 2015) and a large face-to-face network (Triandis et al., 1988) instead of limiting their networks to close relationships. Large networks promote an instrumental form of relatedness that has been termed *customized sociality* (Manago & Vaughn, 2015) meaning that individuals have a greater capacity to tailor their social worlds to meet their personal needs using communication technologies. Facebook contacts can provide useful resources when a specific need arises, although communication between them is infrequent (Ellison, Steinfield, & Lampe, 2007). For example, if someone wanted to know what movie to see this weekend they could post a status update. The movie critic in their Facebook network could make a recommendation and invite him/her to the movie even if they have not communicated with this person in months. Instrumental relatedness may be necessary in highly individualistic societies where people are less attached to their in-groups, receive less support from them, and are therefore required to seek it broadly through a variety of relationships (Rainie & Wellman, 2012; Triandis et al., 1988). Instrumental relatedness may also be reflected in the finding that Facebook users in both countries engaged in more masspersonal use with friends than acquaintances. If these messages were sent out as a way to garner social support, it is interesting that users did not privately contact one individual but instead cast a wide net, sending their message to their network to see who would respond. Alternatively, it could be that Facebook users use masspersonal communication to showcase their social success and build a positive reputation in their network (see Donath, 2007; Tufekci, 2008).

Personal communication serves a different purpose than simply maintaining an open line of communication with one's many social contacts. Personal communication seems to serve the purpose of maintaining and building intimacy in close relationships (Valkenburg & Peter, 2011; Hu et al., 2004). Personal communication on Facebook builds intimacy by allowing for person-specific self-disclosure and back-and-forth exchanges that friends construct together much like traditional face-to-face intimacy building conversations (Altman, 1973). Because of the intimacy building potential of these interactions, they can promote the development and maintenance of close friendships. French students who are less individualistic than American students may value these types of close relationships more and therefore engage in personal communication more frequently with close friends than American students. This may allow them to cultivate these close relationships even when they have large Facebook networks. American students, on the other hand, who use more personal communication with acquaintances than French students, may be using personal communication to turn acquaintances into friendships (Steinfield, Ellison, & Lampe, 2008) or as a way to garner social support from acquaintances (Rozzell et al., 2014).

Considering the predictions of Triandis et al. (1988) it may seem contradictory that French students with large networks would use both more masspersonal and personal communication with their Facebook contacts. However, a study by Hansen, Postmes, van der Vinne, and van Thiel, (2012) provides support that technology can promote both individualistic and collectivistic values depending on how it is used. These researchers randomly assigned children in Ethiopia, a country low in individualism (Hofstede, 2001), to receive laptops and others to receive no laptop or a laptop that stopped functioning during the study period. After one year, they found that children with a working laptop had an increase in their levels of individualistic values and independent self-construals, but their levels of collectivistic values and interdependent self-construals did not decrease. The researchers posit that this is because the laptops provided information to the children that might result in greater independence, but the children also shared and invited others to participate as they used their laptops, which would help to maintain their collectivistic values. Much like the children in Hansen et al.'s (2012) study, French Facebook users may have found ways to use the social network site that are consonant with their values for maintaining close personal relationships with their friends while also maintaining more distant relationships.

This finding is also congruent with Kagitçibasi's (2005) theory that values for emotional interdependence change more slowly than values for personal choice. Kagitçibasi (2005) argues that although these values have typically been presented as opposing they can coexist specifically in communities transitioning from pre-industrial to post-industrialized societies. Results indicated the coexistence of these values in France where Facebook users engage in masspersonal communication when they have large networks to facilitate personal choice in relationships and personal communication to build and maintain intimacy in close relationships. In the U.S., the value for personal choice in relationships was highlighted by users' much larger social networks and their use of masspersonal communication to maintain them.

4.4. Limitations and future directions

One limitation in the study is that the percentage of close and distant ties in American and French students' Facebook networks was not measured. Some research suggests a higher proportion of actual friends to total friends on Facebook in less individualistic cultures (Lee-Won, Shim, Joo, & Park, 2014). Additionally, research conducted in the U.S. suggests that networks typically grow mostly due to adding socially distant ties, such as acquaintances (Manago et al., 2012; Ellison et al., 2007). Therefore network size, which was taken into account in the study, correlates positively with the proportion of distant to close ties on Facebook, and thus it served as a sort of control variable for network composition. Future studies should measure network composition to better understand the influence of the percentage of close versus distant ties on amounts personal and masspersonal communication across cultures.

The current study based its assessment of levels of individualism of the two countries based on previous research. Future studies should measure individuals' levels of individualism as this would allow for a more fine-grained analysis of how individualism may be influencing Facebook behaviors. It may also be advisable in future studies to take into account other sociodemographics variables that are related to individualism. One such variable, relational mobility has been shown to influence cross-cultural differences in privacy concerns on Facebook (Thomson, Yuki, & Ito, 2015), and therefore may also have an influence on the types of communication that users prefer. For example, Lowry et al. (2011) found that privacy concerns increased users' preference for instant messenger. Physical mobility may also be a useful sociodemographics variable to explain differences in communication on Facebook. For example, students who attend university far from home or adults who relocate often for their jobs may be more motivated to maintain a large network of old acquaintances through Facebook than individuals who stay in the same place their entire lives. Examining the differences in sociodemographics variables between countries and their relationship to communication on Facebook could help

elucidate which specific societal differences influence how users communicate on Facebook.

One further line of research could examine how masspersonal and personal communication on Facebook may influence the types of social capital that users garner through the site. It seems likely that masspersonal communication with one's entire network might lead to more bridging social capital as distant ties could respond with new information (Ellison et al., 2011). Personal communication might be especially useful for garnering bonding social capital and in fact, instant messenger has already been linked to a similar construct—social support (Valkenburg & Peter, 2011). Further studies about how types of communication on Facebook are linked with social capital could help users understand how to have their social capital needs met more efficiently on Facebook.

4.5. Conclusions

In the current study support was found for the idea that Facebook is a "cultural import" (Lull, 2000; Tomlinson, 1991), and its specific affordances are used in different amounts in France and the U.S. For example, American students make full use of the ability to collect expansive networks on Facebook. Additionally results indicated that users in France preferred personal communication with friends whereas American users preferred masspersonal and personal communication with acquaintances. Perhaps these differences exist because Facebook, like other forms of computer-mediated communication, is a communication tool that reflects real-life communication patterns (Wellman et al., 2003). Although Facebook may provide new affordances for communication, how users choose to apply these affordances is bound by pre-existing cultural patterns of what is acceptable and valued in interactions with friends and acquaintances (McCall, 1988). Facebook users in different countries may interpret and use this *cultural import* to communicate with others in ways that are consonant with the levels of individualism and congruent forms of social relationships that are valued in their culture.

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Appendix A. Facebook use questionnaire

Please select one response which best corresponds to your actual Facebook use.

	I stay in touch with a high school friend on Facebook by …	Never	Once a year	Several times a year	Once a month	Once a week	Several times each week	Daily
1	Facebook chatting with him/her.							
2	Sending him/her a Facebook message.							
3	Posting on his/her wall.							
4	Commenting on his/her photos.							
5	Commenting on his/her status.							
6	Updating your own status.							
7	Replying to his/her comments on your own page.							
8	Posting stories/videos/links to your own page.							

	I stay in touch with a high school acquaintance on Facebook by …	Never	Once a year	Several times a year	Once a month	Once a week	Several times each week	Daily
1	Facebook chatting with him/her.							
2	Sending him/her a Facebook message.							
3	Posting on his/her wall.							
4	Commenting on his/her photos.							
5	Commenting on his/her status.							
6	Updating your own status.							
7	Replying to his/her comments on your own page.							
8	Posting stories/videos/links to your own page.							

	I stay in touch with a university friend on Facebook by …	Never	Once a year	Several times a year	Once a month	Once a week	Several times each week	Daily
1	Facebook chatting with him/her.							
2	Sending him/her a Facebook message.							
3	Posting on his/her wall.							
4	Commenting on his/her photos.							
5	Commenting on his/her status.							
6	Updating your own status.							
7	Replying to his/her comments on your own page.							
8	Posting stories/videos/links to your own page.							

	I stay in touch with a university acquaintance on Facebook by …	Never	Once a year	Several times a year	Once a month	Once a week	Several times each week	Daily
1	Facebook chatting with him/her.							
2	Sending him/her a Facebook message.							
3	Posting on his/her wall.							
4	Commenting on his/her photos.							
5	Commenting on his/her status.							
6	Updating your own status.							
7	Replying to his/her comments on your own page.							
8	Posting stories/videos/links to your own page.							

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