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Feelings on Facebook and their correlates with psychological well-being: The moderating role of culture

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ABSTRACT

The current study explores four types of emotions reflecting distinct dimensions of social orientation—interpersonal affiliation vs. distance, and valence—positive vs. negative, that users may experience on Facebook and their relationship to psychological well-being through two distinct routes: perceived relationship harmony and perceived control. A survey was conducted in the U.S. (n = 320) and South Korea (n = 336) to explore these relationships, as well as the moderating role of culture (i.e., valuing interdependence vs. independence). Results show that experiencing socially engaging emotions, whether positive (e.g., friendliness) or negative (e.g., shame), is positively associated with life satisfaction through perceived relationship harmony with Facebook friends for users valuing interdependence (vs. independence). In contrast, experiencing positive disengaging emotions (e.g., pride) is positively associated with perceived control in a Facebook context for users valuing independence (vs. interdependence). Perceived control is positively related to life satisfaction for users valuing independence (vs. interdependence) when experiencing positive emotions, whether engaging or disengaging (e.g., anger). Implications regarding adaptive consequences of experiencing culturally fit emotions on Facebook are discussed.

1. Introduction

Given the widespread use of social networking sites, in general, and Facebook, in particular, numerous studies have undertaken examinations of the relationship between online social networks and users' well-being. To date, scholars do not appear to have reached a consensus on whether Facebook use is positively or negatively associated with well-being, perhaps because either outcome is equally plausible depending on numerous factors related to user characteristics or Facebook features, among others. There seems to be agreement, however, that experiencing positive emotions on Facebook boosts well-being, while experiencing negative ones undermines it (e.g., Kross et al., 2013; Oh, Ozkaya, & LaRose, 2014). Although this agreement makes intuitive sense, we challenge it by addressing the role of culture, which has been largely neglected in past research on the topic.

Exploring culture is important because Facebook use is truly a global phenomenon. The network has reached a 72.4% penetration rate in North America, and 17.7% in Asia, though its growth has been dramatically higher in Asia (686%) than in North America (167%) between 2010 and 2017 (Internet World Stats, 2018). Despite this widespread use, little is known regarding the ways in which users in distinct cultures adopt the platform and adapt it to their individual cultural goals. Conceptions of well-being are also culturally distinct (e.g., Uchida, Norasakkunkit, & Kitayama, 2004) and therefore, experiencing positive emotions per se may not be a sufficient predictor of well-being (e.g., Kitayama, Markus, & Kurokawa, 2000; Leu, Wang, & Koo, 2011). For example, experiencing negative feelings (e.g., anger) may help individuals fulfill important goals (e.g., protecting one's rights) and enhance well-being in some cultures (e.g., De Leersnyder, Kim, & Mesquita, 2015). Likewise, experiencing positive feelings (e.g., pride) may hinder the achievement of central goals (e.g., maintaining relationship harmony) and compromise well-being (e.g., Miyamoto, Uchida, & Ellsworth, 2010) in other cultures.

Indeed, recent research shows that it is culturally *fit* emotions (i.e., those emotions that help individuals fulfill goals triggered by culturally prominent ideas), regardless of their valence, that predict our well-being (De Leersnyder et al., 2015; Tamir, Schwartz, Oishi, & Kim, 2017). Using the theoretical framework of culturally fit emotions, this research explores the social orientation of emotions—interpersonal affiliation vs. distance (Kitayama et al., 2000)—and their relationship to well-being in the context of Facebook use. Additionally, culturally distinct routes to well-being (Kitayama, Karasawa, Chrhan, Ryff, &

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Markus, 2010; Uchida et al., 2004) will be examined as potential underlying mechanisms: perceived relationship harmony, a cultural goal prominent in interdependent cultures (e.g., Korea), and perceived control, a cultural goal prominent in independent cultures (e.g., the U.S.).

2. Literature review

2.1. Facebook, feelings, and well-being

There is a definite lack of consensus regarding Facebook effects on well-being, with research implicating several factors related to Facebook use such as network size, intensity of Facebook use, and type of Facebook activities, as well as individual differences such as level of self-esteem, among others, for both enhanced and compromised well-being (Gerson, Plagnol, & Corr, 2016; Kross et al., 2013; Nabi, Prestin, & So, 2013; Oh et al., 2014; Shakya & Christakis, 2017). Moreover, the reasons for these effects are also not very clear, though one plausible mechanism points to users' emotional experiences as a result of Facebook use. For example, Facebook use has been shown to decrease users' stress levels (Nabi et al., 2013), as well as to enhance perceived social support (Kim & Lee, 2011) and overall positive affect (Lin & Utz, 2015; Oh et al., 2014). At the same time, Facebook use has also been shown to trigger negative emotions (Tandoc, Ferrucci, & Duffy, 2015), to negatively impact mood (Sagioglou & Greitemeyer, 2014), and even lead to mood disorders (Kross et al., 2013).

In light of these inconsistent findings, the present research emphasizes the importance of examining culturally fit emotions on Facebook, whether positive or negative, in predicting users' well-being, rather than treating emotional experiences monolithically. The theoretical framework of cultural regulation of emotion (Mesquita, De Leersnyder, & Albert, 2014) posits that we regulate our emotional experiences in order to be congruent with dominant cultural goals, because doing so results in functional outcomes that fulfill those goals, and ultimately in high levels of well-being. Specifically, culturally fit emotions "enable people to navigate the intricacies of their social environments in a coordinated fashion" (Mesquita, Boiger, & De Leersnyder, 2016, p. 31). Importantly, culturally fit emotions can be both positive and negative, and thus even negative emotions can be socially adaptive (Gruber, Mauss, & Tamir, 2011).

For example, some prior research seems to suggest that experiencing negative emotions on Facebook may positively predict well-being. Kim and Lee (2011) showed that positive self-presentation and honest self-presentation on Facebook can both result in high levels of well-being, through different mechanisms. While positive self-presentation boosts well-being directly, honest self-presentation does so through perceived social support. The authors did not assess the emotional impact of these types of self-presentation; however, we suggest that positive self-presentation likely elicits positive feelings and positive self-views, whereas honest self-presentation likely triggers some negative feelings, as well, and involves self-criticism and relational support. Thus, experiencing negative emotions on Facebook may provide users with important social functions, and this may be more common in some cultures (e.g., East Asia) than others.

Likewise, experiencing positive emotions on Facebook can negatively impact well-being. For example, Jung, Pawlowski, and Kim (2017) reported that using Facebook for enjoyment (i.e., pleasure, fun) is negatively associated with psychological well-being (e.g., purpose in life). The authors suggest that mindless hedonism may lead to habitual Facebook use, ultimately resulting in addiction. We argue that culture may also play a role in this association. Specifically, East Asians tend to believe that pleasure is undesirable and unhealthy (Leu et al., 2011). Japanese people, in particular, tend to generate negative descriptions implicating transcendental reappraisal (e.g., "*Happiness goes away quickly*") or social disruption (e.g., "*Others may be jealous of my happiness*") when thinking about happiness (Uchida & Kitayama, 2009).

In addition to pleasure, self-enhancing emotions can also be negatively associated with well-being among East Asians. For example, Koreans appear to be less likely than U.S. Americans to present themselves positively on Facebook (Lee-Won, Shim, Joo, & Park, 2014). This may be the case because Koreans readily accept negative aspects of the self (i.e., self-criticism), whereas U.S. Americans tend to emphasize positive self-views (Heine, Lehman, Markus, & Kitayama, 1999). As such, Koreans may hesitate to experience self-enhancing positive feelings and may instead try to dampen them. For instance, one study showed that Japanese students tend to report mixed affect (e.g., happiness and fear of upsetting others) in response to receiving high exam scores (Miyamoto et al., 2010). Indeed, not all positive feelings on Facebook can contribute to enhancing well-being, particularly in some cultures.

2.2. Culturally divergent routes to psychological well-being

Cross-cultural studies commonly equate country with culture. Although group comparisons based on country (e.g., Korea vs. the U.S.) may provide informative results, this approach tends to oversimplify individual variations within a country. In today's globalized world, individuals can have bi- or even multi-cultural orientations (Hong, Morris, Chiu, & Benet-Martinez, 2000). Accordingly, the current study defines culture as socially transmitted ideas or knowledge structures about the world that may include beliefs, norms, practices, and values (Chiu & Hong, 2007). Instead of making a group comparison, this research explores and measures cultural traits in Korea and the U.S. as a continuous variable.

Several cultural traits have been reported in the relevant literature: (a) individualism vs. collectivism, which place value on the unique individual or in-group as the primary entity (Triandis, 1989), (b) independence vs. interdependence, self-construals that explain how the self relates to others (Markus & Kitayama, 1991), and (c) analytic vs. holistic thinking styles, which emphasize logic or experience (Nisbett, Peng, Choi, & Norenzayan, 2001). This study adopts a combination of the first two frameworks, which overlap considerably at the conceptual level. Both focus on the social orientation dimension (i.e., interpersonal affiliation vs. distance), the only clear difference between the two being that the former takes a prescriptive stance ("My in-group is important"), whereas the latter adopts a descriptive one ("My in-group is who I am") (Peng, Ames, & Knowles, 2001).

Interdependent beings (e.g., Koreans, Japanese, and Chinese) tend to see themselves as connected, flexible, and variable within social contexts. They value social norms, obligations, and fitting in with others, and strive to achieve *communal* goals (Markus & Kitayama, 1991). Thus, for these individuals, well-being is often the result of achieving relationship harmony among in-group members, typically by fulfilling relational obligations rather than one's own exclusive and subjective goals (Suh, Diener, Oishi, & Triandis, 1998). In contrast, independent beings (e.g., U.S. Americans and Western Europeans) tend to see themselves as separate, stable, and distinct from social contexts. They value uniqueness, influence, competence, and their subjective feelings and thoughts (vs. social norms), and strive to achieve *personal* goals (Markus & Kitayama, 1991). For these individuals, well-being is often a consequence of positive affect, positive internal attributes, and positive self-views, which can be achieved by fulfilling personal goals with a great sense of control (Ryan & Deci, 2001). Indeed, perceived relationship harmony and perceived control are important predictors of well-being in interdependent and in independent cultures, respectively (Kitayama, Karasawa, Curhan, Ryff, & Markus, 2010).

We now turn our attention to the social orientation of emotions and their relationship to the distinct conceptions of well-being detailed above.

2.3. Experiencing socially engaging Emotions on Facebook and their well-being routes

In Facebook interactions, users may experience various emotions with distinct social orientations. For example, users experience socially engaging emotions when they empathize with others, fulfill social obligations, and act based on others' expectations, or socially disengaging emotions when they want to be different from others, assert their voice, and protect their rights (Kitayama et al., 2010). These emotional experiences can be positive or negative, resulting in a total of four categories—positive or negative socially engaging emotions, as well as positive or negative socially disengaging emotions.

Socially engaging emotions (e.g., closeness, friendliness, shame, guilt) reflect individuals' underlying motivations for self-criticism, are oriented toward *others,* and are experienced predominantly in interdependent cultures (Kitayama et al., 2000; Markus & Kitayama, 1991). Experiencing socially engaging emotions can be beneficial to well-being in interdependent cultures because these emotions, as culturally fit emotions, help individuals fulfill their central cultural goals. For example, the correlation between experiencing socially engaging positive emotions and emotional well-being (e.g., happiness) is stronger in Japan than in the U.S. (Kitayama et al., 2000). Similarly, experiencing engaging negative emotions, particularly in close relationship contexts, predicts well-being among Koreans (De Leersnyder et al., 2015). Thus, experiencing culturally fit emotions, rather than positive emotions alone, can be a better predictor of well-being (Mesquita et al., 2016; Tamir et al., 2017).

Although these recent studies emphasize the importance of culturally fit emotions in predicting individuals' well-being, the specific underlying mechanisms have not yet been explored. Specifically, in interdependent cultures, where individuals' well-being derives from communal happiness, the most important cultural mandate is the achievement of relationship harmony among in-group members (Kang, Shaver, Sue, Min, & Jing, 2003; Kitayama et al., 2010; Markus & Kitayama, 1991). Consequently, experiencing engaging emotions, whether positive or negative, can lead to well-being through a heightened sense of relationship harmony. Socially engaging negative emotions, in particular, are typically experienced when relational obligations are not met and individuals seek to restore the relationship. Thus, these emotions may facilitate *mutually* sympathetic relationships by inviting social support, which, in turn, can boost communal well-being (Kitayama & Markus, 2000). In contrast, in independent cultures, experiencing engaging negative emotions may signal a threat to the self and may be associated with a lack of perceived control, which could negatively impact well-being.

Among several indicators of well-being (e.g., presence of positive affect, absence of depression, etc.), we focus on life satisfaction—cognitive evaluations of the conditions of one's life (Diener, Emmons, Larsen, & Griffin, 1985). Regarding cultural variation, we examine the extent to which Facebook users place value on interdependence vs. independence. For the specific context of this study, conceptualizing interdependence vs. independence prescriptively rather than as descriptive notions of the self may better tap into the motivational aspects of experiencing culturally fit emotions that fulfill cultural mandates.

Based on the reasoning above, the following moderated mediation hypothesis was drawn (i.e., culture as a moderator).

H1. Perceived relationship harmony (vs. control) will mediate the positive relationship between experiencing positive socially engaging emotions (e.g., friendliness) (H1a), or negative socially engaging emotions (e.g., shame) (H1b) on Facebook, and life satisfaction. This mediated relationship will be stronger for users valuing interdependence rather than independence.

2.4. Experiencing socially disengaging Emotions on Facebook and their well-being routes

Socially disengaging emotions (e.g., pride, superiority, anger, frustration) reflect individuals' underlying motivations for self-enhancement, are oriented toward the *self,* and are experienced predominantly in independent cultures (Kitayama et al., 2000). Experiencing disengaging emotions, whether positive or negative, can be beneficial to well-being in independent cultures because, again, these emotions represent culturally fit emotions (Mesquita et al., 2016; Tamir et al., 2017) that help individuals fulfill their cultural mandates. For example, the correlation between experiencing socially disengaging positive emotions and emotional well-being (e.g., happiness) is stronger in the U.S. than in Japan (Kitayama et al., 2000). Likewise, experiencing disengaging negative emotions, particularly in work contexts, has been shown to contribute to well-being among European Americans (De Leersnyder et al., 2015).

In independent cultures, well-being is based on personal happiness, and the most important cultural mandate is to maintain control over a task/situation (Kitayama et al., 2010). Consequently, experiencing disengaging emotions, whether positive or negative, can lead to well-being through a heightened sense of mastery, because these emotions may trigger adaptive self-enhancement and facilitate the restoration of control. In particular, socially disengaging negative emotions, such as anger, tend to be experienced in response to demeaning offenses or injustices committed by blameworthy others (Lazarus, 1991). The key appraisal dimension of these emotions is *controllability*—the ability to change a particular situation (Lazarus, 1991; Smith & Ellsworth, 1985). Accordingly, these emotions may signal the potential for appeasing the offense/injustice by asserting one's needs (Frijda, Kuipers, & Schure, 1989; Roseman, Wiest, & Swartz, 1994). For example, a series of experiments showed that experiencing disengaging negative emotions, such as anger, with the goal of confrontation (vs. collaboration) made participants perform better in competitive computer games (Tamir, Mitchell, & Gross, 2008) and handle conflicting role-playing negotiations well (Tamir & Ford, 2011). These findings suggest that individuals believe in the utility of experiencing disengaging negative emotions, even though they are unpleasant, and this may be especially the case in independent cultures (Mesquita et al., 2016).

Based on the reasoning above, the following moderated mediation hypothesis was drawn (i.e., culture as a moderator).

H2. Perceived control (vs. relationship harmony) will mediate the positive relationship between experiencing positive socially disengaging emotions (e.g., pride) (H2a), or negative socially disengaging emotions (e.g., anger) (H2b) on Facebook, and life satisfaction. This mediated relationship will be stronger for users valuing independence rather than interdependence.

3. Methods

3.1. Participants and procedures

A professional survey company was commissioned to collect data in Korea and the U.S. Each survey company emailed its online panel members aged 18 and older (n = 4500; n = 6,201) respectively; 1092 members in Korea and 3088 in the U.S. clicked on the online survey link. These members needed to pass several screening questions to participate in the current research. They had to have been born and raised, as well as have citizenship, in either of the two countries, and to have been active Facebook users. If participants indicated that they (a) had never used Facebook over the past one month and (b) had never posted messages on Facebook (e.g., comments, status updates, uploading videos or photos) over the past three months at the time of data collection, they were not allowed to proceed to the questionnaire.

The final sample included a total of 656 Facebook users in Korea

(n = 336, 46.7% females, M_{age} = 31.34, SD = 8.25) and the U.S. (n = 320, 51.9% females, M_{age} = 31.23, SD = 7.81). Approximately 43.0% of participants in the two countries worked in professional, administrative, and clerical sectors, 14.9% were students, 9.5% were self-employed, 9.3% were homemakers, and 8.4% were not employed or "others." Regarding participants' race in the U.S. (multiple checks allowed), a majority of them were Whites (83.8%), followed by African Americans (17.8%) and other (3.7%).

The questionnaire was created in English by the authors of this article and then translated into Korean by one of the authors, who is bilingual in English and Korean. To validate this translation, a professional translator who is also bilingual in English and Korean back-translated the Korean questionnaire into English (Brislin, 1970). The discrepancies between translation and back-translation were identified and negotiated by the two translators.

3.2. Measures

3.2.1. Socially engaging/disengaging emotions on Facebook

Participants indicated the frequency of experiencing (a) five distinct engaging positive emotions (e.g., *closeness*, *friendliness*; α = 0.88, M = 4.19, SD = 1.28), (b) six distinct disengaging positive emotions (e.g., *empowerment*, *pride*; α = 0.89, M = 3.54, SD = 1.33), (c) five distinct engaging negative emotions (e.g., *shame*, *guilt*; α = 0.88, M = 2.59, SD = 1.40), and (d) six distinct disengaging negative emotions (e.g., *anger*, *frustration*; α = 0.92, M = 2.59, SD = 1.40) during their typical Facebook use using a 7-point scale ranging from 1 (*Not at All*) to 7 (*Very Much*). These items were adapted from Kitayama et al. (2000) who proposed the social orientation dimension in organizing emotional experiences and extracted it using a multi-dimensional scaling analysis.

3.2.2. Perceived control

Seven items adapted to the Facebook context assessed perceived control (Pearlin & Schooler, 1978) on a 7-point scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*)—e.g., "*When thinking about my overall Facebook activities, I have little control over the things that happen to me* (reverse coded)" (α = 0.78, M = 4.75, SD = 1.09).

3.2.3. Perceived relationship harmony

Four items adapted to the Facebook context were used to assess perceived relationship harmony (Walen & Lachman, 2000) on a 7-point scale ranging from 1 (*Not at All*) to 7 (*A Great Deal*)—e.g., "*How much do your Facebook friends really care about you?*" (α = 0.89, M = 3.50, SD = 1.45).

3.2.4. Valuing interdependence and independence

Using Schwartz's (1992) value inventory pertaining to embeddedness and mastery, endorsement of interdependence and independence values (see also Sims et al., 2015) was assessed on a 6-point scale ranging from 1 (*Not At All Important*) to 6 (*Supremely Important*). Participants were asked to indicate the extent to which they found each of six values of interdependence to be important to them (e.g., *courtesy*, *respect for tradition*, *reciprocation of favors*, *self-restraint*, *conformity*, *accepting my portion in my life*; α = 0.77, M = 4.06, SD = 0.87). Valuing interdependence reflects one's desire to prioritize communal (vs. personal) goals and to change oneself to be consistent with these goals. Participants were also asked to indicate the extent to which they found each of six values of independence to be important to them (e.g., *influential*, *capable*, *independent*, *choosing my own goals*, *successful*, and *self-respect*; α = 0.86, M = 4.37, SD = 0.92). Valuing independence reflects one's desire to prioritize personal (vs. communal) goals and to change one's surroundings to be consistent with one's goals. Valuing independence relative to interdependence was calculated by subtracting the interdependence from independence scores (M = 0.31, SD = 0.66). Thus, a positive value represented cultural values placed on independence, a negative value represented on interdependence, while a value of zero represented both.

3.2.5. Life satisfaction

Five items assessed respondents' perceived life satisfaction (Diener et al., 1985) on a 7-point scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*)—e.g., "*In most ways my life is close to my ideal*" (α = 0.89, M = 4.03, SD = 1.44).

3.2.6. Control variables

Facebook was introduced several years later in Korea (i.e., 2010) than in the U.S. (i.e., 2004) (Morrison, 2010). As such, several Facebook use variables were measured and controlled for in order to minimize the potential confounds stemming from this discrepancy: amount of Facebook use (i.e., how long participants have been using Facebook in months multiplied by daily Facebook use in minutes (Lee-Won et al., 2014) and number of Facebook friends. These two variables were log-transformed because of skewness. Additionally, although Facebook is the most frequently used social media platform in the U.S. (Smith & Anderson, 2018), KakaoStory is the most frequently used one in Korea, followed by Facebook (Kim, 2016). Thus, it is possible that active Facebook use is more prevalent in the U.S. than in Korea. To minimize this difference, frequency of engaging in various Facebook activities (e.g., posting, tagging, reading, clicking on the like button, etc.) ranging from 1 (*Never*) to 7 (*Almost Always*) were created, measured, and averaged (α = 92). Finally, age, gender, and the big five personality traits—extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience (Gosling, Rentfrow, & Swann, 2003) also served as control variables.

4. Results

4.1. Analysis strategy

After combining the data collected from the U.S. and Korea, we first examined whether valuing interdependence vs. independence (W) moderate each of the following three paths by conducting a series of regression analyses: (*a*) X (independent variable) → M (mediator), (*b*) M → Y (dependent variable), and (c) X → Y (Fig. 1). Because cultural traits were assessed on a continuous level of measurement, their moderation effect was examined at three distinct values (M+1SD = 0.97; M = 0.31; M-1SD = −0.35). However, only the two values that reflect independence (M+1SD) and interdependence (M-1SD), respectively, were reported in this article.

Regarding the hypothesized moderated mediation effects, these effects can be detected when (a) X (emotions experienced on Facebook) and W (culture) jointly influence M (perceived relationship harmony vs. perceived control)—PROCESS Model 7, (b) M and W jointly influence Y (life satisfaction)—PROCESS Model 14, or (c) W influences simultaneously both the effect of X on M and the effect of M on Y—PROCESS Model 58 (Hayes, 2013; Muller, Judd, & Yzerbyt, 2005; Preacher, Rucker, & Hayes, 2007). After detecting significant moderation effects of culture in paths *a*, *b* or *both* from the regression analyses, an appropriate model was run to formally test whether the index of moderated mediation was significantly different from zero (Hayes, 2015). We did not specify which path (*a*, *b*, or *both*) would be moderated exactly by cultural values because although prior research has explored the relationship between emotional experiences and psychological well-being, relevant mediators have not been fully theorized. Variables included in interaction terms were centered prior to analyses. All analyses used 95% bias-corrected confidence intervals (CIs) based on bootstrapping procedures (N = 5000).

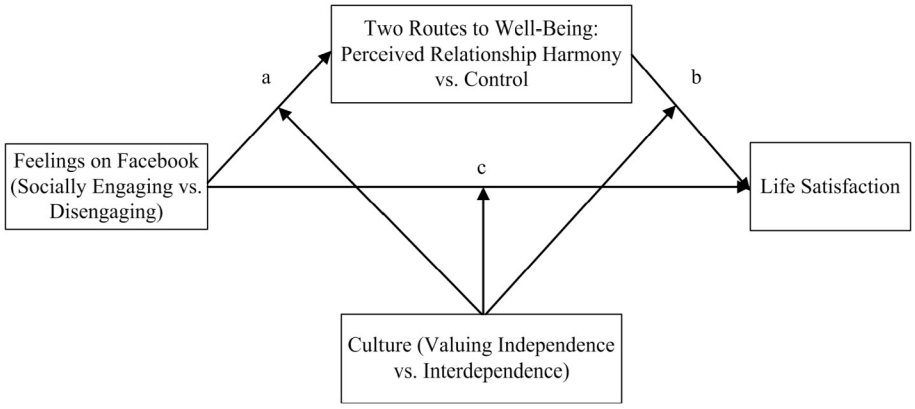

Fig. 1. Culture as a Moderator among the Relationships of Emotions on Facebook, Perceived Harmony vs. Control, and Life Satisfaction. *Note*. To detect moderated mediation effects hypothesized, culture should moderate *a* path, *b* path, or *both* in the mediated relationships.

4.2. Testing the moderating role of culture in experiencing "engaging" emotion on facebook

H1a predicted that perceived relationship harmony would mediate the positive association between experiencing engaging positive emotions on Facebook and life satisfaction, and that this mediated relationship would be stronger for Facebook users valuing interdependence rather than independence. The results (Fig. 2 upper) revealed a significant Perceived Relationship Harmony X Cultural Values interaction in predicting life satisfaction, $b = -.15$, $p = .04$. This interaction suggests that the positive relationship between perceived relationship and life satisfaction was stronger for users valuing interdependence than independence. Subsequently, PROCESS Model 14 was run. Results confirmed that the mediation effect (engaging positive emotions → perceived relationship harmony → life satisfaction) was moderated significantly by cultural values, index of moderation = −.06, *SE* = 0.03, CI [-0.109, −0.002]. Specifically, the mediation effect was stronger for users valuing interdependence, $b = 0.17$, CI [0.110, 0.229] rather than independence, $b = 0.10$, CI [0.040, 0.158]. Thus, H1a was supported.

H1b predicted that perceived relationship harmony would also mediate the positive association between experiencing engaging negative emotions on Facebook and life satisfaction, and this mediated relationship would be stronger for users valuing interdependence than independence. The result (Fig. 2 lower) revealed a significant Engaging Negative Emotion X Cultural Values interaction in predicting perceived relationship harmony, $b = -0.16$, $p = .009$. This interaction suggests that the positive relationship between engaging negative emotions and perceived relationship harmony was stronger for users valuing interdependence rather than independence. Accordingly, PROCESS Model 7 was run. Results showed that the mediation effect (engaging negative emotions → perceived relationship harmony → life satisfaction) was moderated significantly by cultural values, index of moderation = −.05, *SE* = 0.02, CI [-0.096, −0.015]. Specifically, the mediation effect was stronger for users valuing interdependence, $b = 0.10$, CI [0.061, 0.157] rather than independence, $b = 0.04$, CI [-0.002, 0.078]. Thus, H1b was supported.

Not directly relevant to H1, the results of engaging positive emotion model (Fig. 2 upper) showed that the Perceived Control X Cultural Values interaction was significant in predicting life satisfaction, $b = 0.20$, $p = .002$. This interaction suggests that the association between perceived control and life satisfaction was stronger for users valuing independence rather than interdependence. However, the results of PROCESS Model 14 revealed that the mediation effect (engaging positive emotions → perceived control → life satisfaction) was *not* moderated significantly by cultural values, index of moderation = 0.01, *SE* = 0.01, CI [-0.005, 0.032].

4.3. Testing the moderating role of culture in experiencing "disengaging" emotion on facebook

H2a predicted that perceived control would mediate the positive relationship between experiencing socially disengaging positive emotion on Facebook and life satisfaction, and this mediated relationship would be stronger for users valuing independence than interdependence. The results (Fig. 3 upper) revealed a significant Disengaging Positive Emotions X Cultural Values interaction in predicting perceived control, $b = 0.10$, $p = .02$ and a significant Perceived Control X Cultural Values interaction in predicting life satisfaction, $b = 0.18$, $p = .005$. These findings suggest that the relationship between disengaging positive emotions and perceived control was stronger for users valuing independence rather than interdependence. Likewise, the relationship between perceived control and life satisfaction was stronger for users valuing independence rather than interdependence.

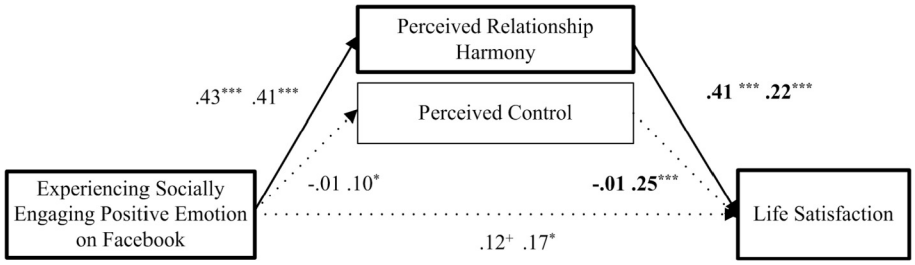

Fig. 2. The Moderating Roles of Cultures in Experiencing Socially "Engaging" Emotions on Facebook. Upper Fig.: Engaging Positive Emotion → Relationship (vs. Control) → Life satisfaction (H1a). Lower Fig.: Engaging Negative Emotion → Relationship (vs. Control) → Life satisfaction (H1b). *Note*. Entries are unstandardized *b*. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$. The control variables were not shown for a parsimonious presentation. The first and second numbers in a pair represent Facebook users valuing interdependence and independence, respectively. Bold fonts indicate significant differences between the two cultures. Dotted arrows denote paths that are not statistically significant at $p < .05$ for at least one culture.

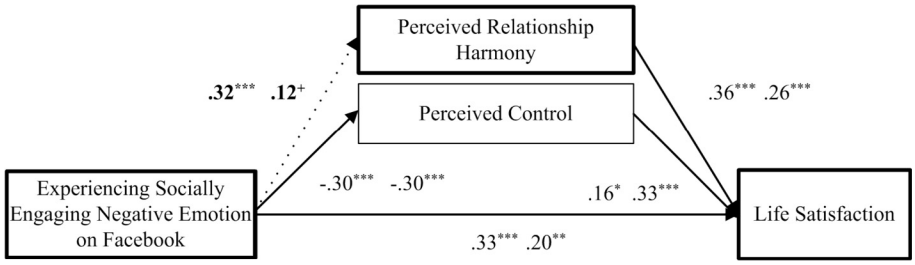

Fig. 2. (*continued*)

Subsequently, PROCESS Model 58 was run. Because cultural variables (W) were measured continuously, this model does not provide the index of moderated mediation. Results showed that the mediation (disengaging positive emotions → perceived control → life satisfaction) effect was stronger for users valuing independence, $b = 0.011$, CI [-0.010, 0.041] than interdependence, $b = -0.001$, CI [-0.021, 0.012]; however, the mediation effect for users valuing independence was not significant. Accordingly, although the moderation effects of culture were significant and the direction of moderated mediation effect was consistent with the prediction, the mediation effect of perceived control was *not* significant among users valuing independence. Thus, H2a was partially supported.

H2b predicted that perceived control would mediate the positive relationship between socially disengaging negative emotions on Facebook and life satisfaction, and this mediated relationship would be stronger for users valuing independence than interdependence. However, contrary to the prediction, results (Fig. 3 lower) showed that neither a Disengaging Negative Emotions X Cultural Values interaction on perceived control ($b = -0.04$, $p = .29$) nor a Perceived Control X Cultural Values interaction on life satisfaction ($b = 0.12$, $p = .10$) was significant. Because of these non-moderating effects of culture involving either the *a* or *b* paths, the full moderated mediation model was not formally tested. Thus, H2b was not supported.

While not directly relevant to H2, unexpected findings are noteworthy in the disengaging negative emotions model (Fig. 3 lower). A Disengaging Negative Emotions X Cultural Value interaction predicting perceived relationship harmony was significant, $b = -0.14$, $p = .01$. This interaction suggests that the association between disengaging negative emotion and perceived relationship harmony was positive and strong for users valuing interdependence rather than independence. Accordingly, the results of PROCESS Model 7 confirmed that the mediation effect (disengaging negative emotions → perceived relationship harmony → life satisfaction) was moderated significantly by cultural values, index of moderation = −.05, $SE = 0.02$, CI [-0.104, −0.014]. Specifically, the mediation effect was stronger for users valuing interdependence, $b = 0.08$, CI [0.041, 0.132] than independence, $b = 0.01$, CI [-0.034, 0.050]. This finding is similar to that of *engaging* negative emotion model.

5. Discussion

5.1. Findings and implications

The purpose of the current research was to explore socially engaging vs. disengaging emotions experienced on Facebook in relation to well-being. Importantly, the moderating role of culture in these relationships was also examined to understand adaptive consequences of experiencing culturally fit emotions. Results showed that experiencing socially engaging emotions on Facebook, regardless of their valence, was positively associated with life satisfaction through perceived relationship harmony with Facebook friends, among users valuing interdependence rather than independence. In the model of socially engaging positive emotions, the association between perceived control and life satisfaction was stronger for users valuing independence rather than interdependence.

Findings regarding socially disengaging emotions on Facebook were less straightforward. Specifically, in the model of disengaging positive emotions, the associations (a) between experiencing these emotions and perceived control, and (b) between perceived control and life satisfaction were stronger for users valuing independence rather than interdependence. Thus, both paths (*a* and *b*) were significantly moderated by culture; however, the mediation effect through perceived control was *not* stronger enough for users valuing independence rather than interdependence. Meanwhile, experiencing socially disengaging negative emotions on Facebook did not reveal the expected result. Specifically, the association between experiencing disengaging negative emotions and perceived control was *negative*, rather than positive, regardless of cultural values. Moreover, perceived relationship harmony significantly mediated the association between experiencing these emotions and life satisfaction, and this positive mediation effect was stronger for users valuing interdependence rather than independence.

In sum, these findings suggest that Facebook users valuing interdependence tended to benefit from experiencing negative emotions, regardless of their social orientations, as well as positive emotions oriented towards others, which boosted perceived relationship harmony with Facebook friends. In contrast, Facebook users valuing independence tended to benefit from experiencing positive emotions,

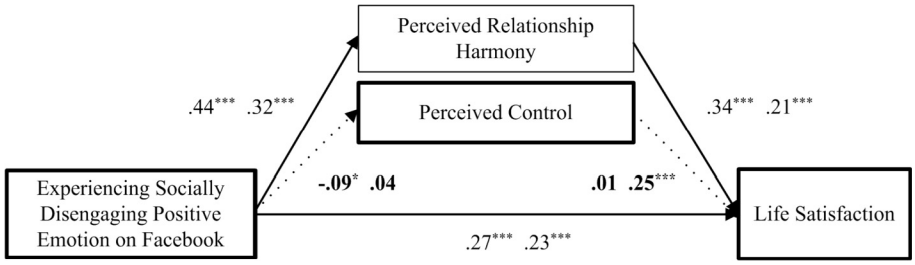

Fig. 3. The Moderating Roles of Cultures in Experiencing Socially "Disengaging" Emotions on Facebook. Upper Fig.: Disengaging Positive Emotion → Control (vs. Relationship) → Life satisfaction (H2a). Lower Fig.: Disengaging Negative Emotion → Control (vs. Relationship) → Life satisfaction (H2b). *Note.* Entries are unstandardized *b*. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$. The control variables were not shown for a parsimonious presentation. The first and second numbers in a pair represent Facebook users valuing interdependence and independence, respectively. Bold fonts indicate significant differences between the two cultures. Dotted arrows denote paths that are not statistically significant at $p < .05$ for at least one culture.

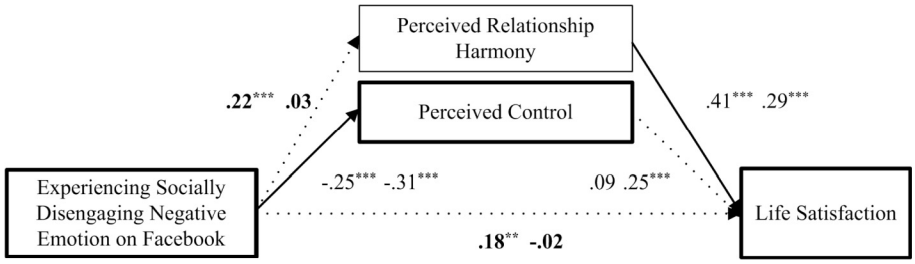

Fig. 3. (*continued*)

regardless of their social orientation, which triggered perceived control in Facebook settings and life satisfaction.

Several speculations can be made about the effects of disengaging emotions, specifically regarding (a) why the experience of disengaging positive emotions was *not* significantly related to perceived control for users valuing independence and (b) why the experience of disengaging negative emotions was *negatively* related to perceived control for users valuing independence, but (c) positively related to perceived relationship harmony for users valuing interdependence.

Regarding (a) and (b), the current study measured perceived control in the context of Facebook (i.e., online) rather in offline settings. Thus, our online-only measure may reflect a possibly exaggerated positive self-view (e.g., hubristic pride) rather than true self-enhancement (e.g., authentic pride), which inevitably reflects a sense of arrogance and grandiosity (Tracy & Robins, 2007). Indeed, research has shown that Facebook can promote narcissistic tendencies, such as showing off (Buffardi & Campbell, 2008) and self-aggrandizement (Bergman, Fearrington, Davenport, & Bergman, 2011). Therefore, conceptual and operational distinctions between positive self-views and genuine self-enhancement (Humberg et al., 2018) in Facebook and offline contexts may be helpful in order to fully understand the impact of disengaging emotions on perceived control.

Regarding (c), it is perhaps important to consider the distinct antecedents and appraisals of disengaging negative emotions in interdependent vs. independent cultures. Prior research suggests that individuals in interdependent cultures tend to experience disengaging negative emotions, such as anger, when non-close others (e.g., out-group members) violate interpersonal norms (e.g., neglecting relationship obligations), in particular (Boiger, Mesquita, Uchida, & Barett, 2013; Ohbuchi et al., 2004). In contrast, individuals in independent cultures tend to experience these emotions when close others (e.g., in-group members) violate personal rights (e.g., injustice), in particular. If this is the case, experiencing disengaging negative emotions (due to out-group members' social-norm violations) may heighten perceived relationship harmony among *in-group* members (i.e., Facebook friends) because users valuing interdependence may acknowledge close others' support and approval and thus experience a greater sense of belongingness. Of course, these interpretations await further empirical investigation.

Alternatively, Facebook social interactions, in general, may promote relatedness (e.g., social settings) rather than autonomy (e.g., work settings). Therefore, for users valuing independence in particular, experiencing socially disengaging negative emotions on Facebook may not heighten perceived control because the Facebook environment may simply not be compatible with the search for competitive autonomy. Consequently, future research may benefit from exploring functional outcomes of experiencing socially disengaging negative emotions in competitive and confrontational, rather than broad and general, contexts.

The current research suggests several theoretical implications. Although prior studies have examined emotions (e.g., stress, depression, and anxiety) in online settings, including social networking (e.g., Kross et al., 2013; Nabi et al., 2013; Sagioglou & Greitemeyer, 2014), the relationship between culture and emotional experiences has been largely overlooked. Therefore, the current research broadens the scope of research on Facebook use and well-being by addressing the importance of culturally fit emotions, regardless of their valence, in allowing Facebook users to fulfill central cultural mandates (particularly, relatedness). We acknowledge that each emotional state has its unique meaning and mechanism as discrete emotion theory suggests (e.g., DeSteno, Petty, Wegener, & Rucker, 2000; Raghunathan & Corfman, 2004; Roseman, 1991); however, because of the dearth of research on cross-cultural differences in Facebook emotional experiences, the broad categories pertaining to the social orientation of emotions may provide a good starting point towards gaining a basic understanding of these differences.

Relatedly, the current research attempted to overcome the static approach to culture (i.e., culture = country) by conceptualizing culture as knowledge structures and measuring the two cultural values continuously across the two countries. In our sample, U.S. Americans (60.9%) were more likely than Koreans (51.5%) to endorse independence values, Koreans (31.8%) were more likely than U.S. Americans (21.3%) to endorse interdependence values, while approximately equal percentages of participants of the two countries (17.8% of U.S. Americans and 16.7% of Koreans) endorsed both values, χ^2 (df = 2) = 9.63, $p < .01$, Cramer's V = 0.12. Thus, the two cultural values co-exist in the two countries to varying degrees.

5.2. Limitations and suggestions for future research

Several limitations of this research should be addressed. We did not consider or measure specific mechanisms underlying the effects of negative emotions experienced on Facebook. For instance, we assume that if users valuing interdependence experience socially engaging negative emotions, these users perhaps engage in self-criticism reflecting concerns about close others' support and approval, which, in turn, foster relational self-improvement and in-group harmony. The decision to omit these underlying mechanisms was based on the desire for consistency with the parallel model involving positive emotions; however, future research may isolate and explore negative emotions in more detail.

Although the current research conceptualized culture as cultural traits (valuing interdependence vs. independence) rather than as country, the direct causal links between culture and the outcome variables were not explored. To explore these links, future research may consider manipulating culture as a state (vs. trait). Several scholars have attempted to prime culture in experimental settings. For example, in a study with Chinese American participants, “China” vs. “U.S.” culture was manipulated through exposure to cultural icons, such as the Great Wall vs. the Statue of Liberty (Hong et al., 2000). Similarly, future research may recruit, for example, ethnic minority groups in the U.S. whose chronic accessibility to two distinct cultures is relatively high, and explore how each of the two cultures can be activated and influence cultural relevant outcomes in Facebook settings.

Relatedly, the cross-sectional design of the current research precludes any causal interpretation of the findings. For example, experiencing socially disengaging positive emotions may help Facebook users valuing independence realize perceived control; conversely, however, it

is possible that perceived control leads those users to experience socially disengaging positive emotions. Therefore, future research may benefit from employing longitudinal designs to infer causality in the relationships among culturally fit emotions experienced on Facebook, the fulfillment of cultural mandates, and well-being.

Finally, the current research assessed focal variables using self-report measures, which may be vulnerable to response biases, such as moderacy (i.e., rating middle points particularly in Asian countries, such as selecting "4" on a 7-point scale) or extremity (i.e., rating extreme points particularly in Western countries, such as selecting "1" or "7" on a 7-point scale) (Grimm & Church, 1999). These biases may not be problematic particularly when exploring the relationships between variables, rather than mean-score differences in the data collected from different countries (Bond & van de Vijver, 2011); however, self-report measures alone may not be entirely free of these response biases in cross-cultural research. Future research may benefit from including participant observations or archival data in the context of Facebook.

6. Conclusion

Despite these limitations, the current research broadens the scope of research on social media and well-being by exploring the role of culture. Similar to other cultural practices, in general, experiencing culturally fit emotions stemming from social interactions on Facebook appear to make users fulfill central cultural mandates. By providing culturally affordable environments, social interactions through social media appear to produce culturally adaptive users, though the distinction between genuine self-enhancement vs. (exaggerated) positive self-views on Facebook awaits further investigation.

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