Not always the best medicine: Why frequent smiling can reduce wellbeing

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HIGHLIGHTS

• The meaning people attach to the act of smiling affects their subjective wellbeing.
• People believe that smiling either reflects happiness or is an attempt to become happy.
• Smile frequency can increase or reduce wellbeing, based on their belief.
• Frequent smiling can backfire and make a person less happy.

ARTICLE INFO

ABSTRACT

Conventional wisdom (and existing research) suggests that the more people smile, the more positive they feel, and positive feelings are known to enhance wellbeing. Across three studies, instead, we show more frequent smiling does not always increase happiness, and as a consequence, wellbeing. Frequent smiling results in more wellbeing than infrequent smiling only among people who interpret smiling as reactive or reflecting happiness. Among people who interpret smiling as proactive and causing happiness, frequent smiling results in less wellbeing than infrequent smiling. Here, frequent smiling backfires, evoking less happiness than infrequent smiling, which in turn reduces wellbeing. Thus, smiling by itself does not increase happiness, or wellbeing. Instead, the belief that one must already be happy when one smiles is what increases happiness, and as a result, wellbeing. (128 words)

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Introduction

Happiness is central to a person's long-term wellbeing. It improves thinking, boosts immune health, relaxes blood vessels and lowers blood pressure, increases social engagement, improves personal relationships, increases pain tolerance, and helps people cope with negativity (Aspinwall, 1998; Baron, 1990; Barsade, 2002; Bodenhausen, Kramer, & Susser, 1994; Clark & Isen, 1982; Fredrickson, 2001; Labroo & Patrick, 2009; Lyubomirsky, King, & Diener, 2005). Essentially, happiness helps people live longer and live better. Happiness also boosts immediate wellbeing, because people interpret their positive feelings as implying that life is good (Schwarz & Clore, 1983). Nations want to improve wellbeing of their citizens, and most people want, and try, to be happy (Gross, 1998 a,b; Larsen, 2000; Thayer, Newman, & McClain, 1994).

A simple way to increase positive feelings is to adopt a smile-like expression (Ekman & Davidson, 1993; Ekman, Freisen, & Ancoli, 1980; Kleinke, Peterson, & Rutledge, 1998; Kleinke & Walton, 1982; Strack, Martin, & Stepper, 1988). Physiologically, smile-like facial expressions, relative to neutral or frown-like expressions, enhance positive feelings by increasing air flow through the nose which cools blood to the brain (McIntosh, Zajonc, Vig, & Emerick, 1997; Zajonc, Murphy, & Inglehart, 1989). Psychologically, people infer their attitudes from their actions just as an observer might (Bem, 1972; Koriat, Ma'ayan, & Nussinson, 2006), and facial expressions provide feedback to a person regarding how he is feeling (Larsen, Kasimatis, & Frey, 1992). As a result, "the free expression of an emotion can intensify it" (Darwin, 1955; James, 1950). Overtime, pairing of positive outcomes and positive feelings with smile-like expressions can also result in smiling becoming conditioned with positive feelings; consequently, the mere act of smiling can evoke positive feelings (Dimberg, 1987; Schnall & Laird, 2003). In this research, however, we consider whether smiling can instead make a person less happy and thereby reduce a person's wellbeing.

The proposition that smiling is likely to always increase positive feelings assumes that there is only a single, specified positive association

between positive-emotion experience and smiling behavior. While unique emotion–behavior links may have existed during early evolution, and in some situations there may still be a predominant link between emotion and behavior, the development of more complex cognitive-systems in people has modified these links (Baumeister, Vohs, DeWall, & Zhang, 2007; Horstmann, 2003; Isen, 1984; Robinson, 1998). The same emotion can evoke multiple behaviors, and multiple emotions can result in the same behavior (Robinson, 1998). Furthermore, in the context of smiling, in some cultures smiling actually is used to mask negative emotions such as anger (e.g., the Japanese; Friesen, 1972), embarrassment (e.g., the British; Edelmann et al., 1987), or sadness (e.g., Russians; Matsumoto, Yoo, Hirayama, & Petrova, 2005). To such people, smiling is likely to be unpleasant and even remind them of feeling negative. Primatologists additionally claim that evolutionarily, smiling was often a response to fear and submission and associated with negative emotion (Preuschoft, 1992). Thus, for some populations and in some situations, smiling may convey to a person that he is not happy, and if the person senses that he is smiling, it is possible that smiling might reduce the experience of happiness.

We posit that although people smile when they are happy (reactively), and smiling does reflect happiness, people also smile when they are unhappy (proactively), to mask negative emotion, or to become happy. As a result, people are likely to associate the act of smiling with feeling happy but also with feeling unhappy and smiling may be associated either with the belief that a person is happy or that the person is unhappy and trying to become happy. Depending on which of these beliefs is momentarily or chronically accessible to a person at the time he smiles, the act of smiling may increase or reduce the person's current happiness, if the person somehow senses that he is smiling. Therefore, frequent smiling will increase happiness only when a person's accessible theory is that smiling is reactive. When the accessible theory is that smiling is proactive, frequent smiling will reduce happiness. Here, smiling may evoke inferences that one is experiencing negative emotion and feel physiologically unpleasant. Thus, smile-theory and smile-frequency will jointly influence current happiness. As judgments of wellbeing are constructive and assimilate with a person's momentary happiness (Schwarz & Clore, 1983), they are likely to incorporate these experiences of happiness or unhappiness caused by smiling.

Across three studies, we tested whether smile-theory moderates the effect of smiling on wellbeing. In Study 1, a field study, we measured smile-theory and smile-frequency in a longitudinal design, and we used both of these factors to predict wellbeing. In Study 2 we then manipulated smile-theory and whether facial activity is smile like or non-smile like, and we used these measures to predict wellbeing. Study 3 was designed to find direct evidence that smile-theory moderates the effect of smiling on happiness, which in turn impacts wellbeing. It is interesting that a factor as subtle as a person's accessible smile-theory can moderate momentary experience of happiness from smiling, and as a result, wellbeing. Taken together, our findings show that frequent smiling does not always make people happy—rather, the impact of smiling on happiness is contingent on accessible naïve theories about why people smile, and these theories can change whether frequent smiling increases or reduces experienced happiness, and as a consequence, wellbeing.

Study 1: Measured smile-theory and smile-frequency — a longitudinal investigation

One-hundred twenty-six participants (53 males; M_{age} = 34.65, SD = 12.32) from Mechanical Turk's online panel were compensated $1 each to participate in a study on people's life experiences. The study comprised two short 15-minute surveys to be completed exactly two weeks apart, each conducted in the evening between 6 pm and 8 pm. Eighteen participants who completed the first survey did not respond to our email requesting that they complete the second survey. The data of these participants could therefore not be included

in our analysis, resulting in one-hundred eight complete responses (45 males; M_{age} = 35.12, SD = 12.36).

Both surveys were identical. In each survey, after providing informed consent, participants were instructed that they would next report their agreement with a few personal statements. Participants then completed our key measures of smile-frequency for that day ("I smiled a lot today," "I smiled very frequently today," 1 = strongly disagree, 7 = strongly agree; averaged to form a smile-frequency index; $r_{survey1}$ = .90, $r_{survey2}$ = .95, ps < .001) and smile-theory (1 = people smile to feel good; 7 = people smile when they feel good; the smile-theory and smile-frequency questions were counterbalanced). These measures were embedded in a series of demographic measures that included self-reported fluency in English, gender, age, and ease of using a computer (these factors did not impact our results) to reduce attention to the individual items and to limit demand effects, and additionally, all of the items were presented individually, each on a separate webpage. Notably, in our sample, participants tended to endorse reactive smiling theories more than proactive smiling theories (M = 5.84, SD = 1.17), as one might expect in a western sample. They then reported wellbeing on the 5-item Satisfaction with Life Scale ([SWLS], Diener, Emmons, Larsen, & Griffin, 1985). Sample items include: in most ways my life is close to ideal, the conditions of my life are excellent, and I am satisfied with my life (all items measured on 7-point scales with 1 [strongly disagree] and 7 [strongly agree]). We averaged these measures to create an index for participants' subjective wellbeing ($\alpha_{survey1}$ = .90; $\alpha_{survey2}$ = .91; higher scores indicate greater subjective wellbeing).

Results and discussion

For all studies, associated means, standard deviations (where the mean is not a point estimate) and sample size are provided in Table 1.

Overall wellbeing

For survey1 (n = 126), a regression analysis predicting wellbeing from mean-centered smile-theory, mean-centered smile-frequency, and their interaction revealed a main effect of smile-frequency, b = .44, SE = .07, $t(122)$ = 6.66, p < .001, and the predicted interaction between smile-theory and smile-frequency, b = .18, SE = .04, $t(122)$ = 4.29, p < .01, η^2 = .24. Spotlight analyses ($\pm$1SD, Aiken & West, 1991) revealed, not surprisingly, that among the reactive-smile participants, frequent (M = 6.39) compared to infrequent (M = 3.12) smiling resulted in higher wellbeing, b = .54, SE = .17, $t(122)$ = 3.26, p < .01. Importantly, among the proactive-smile participants, frequent (M = 2.48) compared to infrequent (M = 5.62) smiling resulted in lower wellbeing, b = −.52, SE = .13, $t(122)$ = −4.13, p < .001. As a replication, survey2 (n = 108) regression analysis also revealed a main effect of smile-frequency, b = .44, SE = .07, $t(104)$ = 6.01, p < .001, and the predicted interaction between smile-theory and smile-frequency, b = .12, SE = .09, $t(104)$ = 1.32, p = .07, η^2 = .10. Among the reactive-smile participants, frequent (M = 5.94) compared to infrequent (M = 4.09) smiling resulted in higher wellbeing, b = .30, SE = .15, $t(104)$ = 1.98, p < .05; among the proactive-smile participants, frequent (M = 3.84) compared to infrequent (M = 4.88) smiling resulted in directionally lower wellbeing, b = −.11, SE = .07, $t(104)$ = −1.53, p = .14.

Cross-lagged panel analysis

To increase confidence in our causal model that smile-theory and smile-frequency jointly impact wellbeing and ensure that the reverse is not equally true, we conducted a cross-lagged panel analysis (Granberg & King, 1980; Kahle & Berman, 1979; Kenny, 1975; Kenny & Harackiewicz, 1975; Peters & Van Voorhis, 1940; see Fig. 1). First, we mean-centered smile-theory1 and smile-frequency1 and multiplied them to create interaction1, and we mean-centered smile-theory2 and

Table 1
Wellbeing as a function of smile-theory and smile-frequency.

	Smile as reactive		Smile as proactive	
	Frequent smiling	Infrequent (or non) smiling	Frequent smiling	Infrequent (or non) smiling
Study 1 (n = 108)				
Wellbeing (survey1)	6.39[a]	3.12[b]	2.48[b]	5.62[a]
Wellbeing (survey2)	5.94[a]	4.09[b]	3.84[b]	4.88[a]
Study 2 (n = 85)				
Wellbeing	4.99	4.19	3.77	4.93
	(0.95)[a]	(1.26)[b]	(1.40)[b]	(1.23)[a]
Study 3 (n = 63)				
Wellbeing	5.47[a]	4.17[b]	3.55[b]	5.73[a]
Happiness	5.51[a]	4.68[b]	3.68[b]	5.67[a]
Evaluation of common picture	4.83[a]	5.46[b]	6.37[b]	5.75[a]
Evaluation of ten vs. one picture	4.17[a]	5.46[b]	5.74[b]	5.75[b]

Note:
1. Planned contrasts for cells that differ at p < .05 are marked with different superscripts.
2. Means in studies 1 and 3 are point estimates from spotlight analysis (at ± 1SD) and do not have associated standard deviations. For study 2, standard deviations are presented in parentheses.

smile-frequency2 and multiplied them to create interaction2. Next, we looked at the autocorrelation between interaction1 and interaction2 which, not surprisingly, was high and significant, $r = .35$, $p < .01$, as was the autocorrelation between wellbeing1 and wellbeing2, $r = .45$, $p < .01$. Third, we looked at the synchronous correlation between interaction1 and wellbeing1 (controlling for main effects of theory1 and frequency1) which was significant, $r = .18$, $p < .05$, as was the synchronous correlation between interaction2 and wellbeing2 (controlling for main effects of theory2 and frequency2), $r = .12$, $p = .07$. This finding replicates our regression results and supports our premise that smile-theory and smile-frequency jointly impact wellbeing at any given time. Finally, and importantly, to establish causal directionality and show that current theory × frequency can predict future wellbeing but current wellbeing cannot predict future theory × frequency, we looked at cross-lagged correlations. Here, we found, as predicted, that interaction1 can predict wellbeing2, $r = .21$, $p < .05$, but wellbeing1 cannot predict interaction2, $r = .04$, ns. Additionally, the difference between these two correlations, although not significant, $z = 1.25$, $p = 0.20$, was in the predicted direction. It is possible that this difference did not reach statistical significance due to small sample size. According to Kenny (1975), "it is very difficult to obtain statistically significant differences between cross-lagged correlations even when the sample size

is moderate from 75 to 300 (p. 894)." In sum, these cross-lagged panel analysis results are a relatively strong indication that the predominant causal flow is from the joint influence of smile-theory and smile-frequency to subjective wellbeing and not in the opposite direction.

A major strength of this investigation is in showing our proposed effect in the field in two different time periods and presenting preliminary evidence regarding causal flow, but we did not manipulate smile-theory or smile-frequency. To build on these findings, one goal in Study 2 is to provide converging evidence by manipulating smile-theory. Also, Study 1 is open to a possibility that people who smile more over time are just more facially-expressive and therefore people with a proactive smile-theory become less happy and report less wellbeing after doing any facial-muscular action. Although, conceptually, the reason why people with a proactive smile-theory should somehow feel unhappy after any frequent facial-muscular action is unclear, another goal in Study 2 was to make all participants engage in a frequent facial-muscular action, but to assign roughly half of them to a frequent smile-like facial muscular action and the remainder to a non-smile like facial muscular action. Thus, we manipulated smile-theory (reactive or proactive) and we manipulated the nature of the frequent action (smile or non-smile) between-participants and then measured wellbeing.
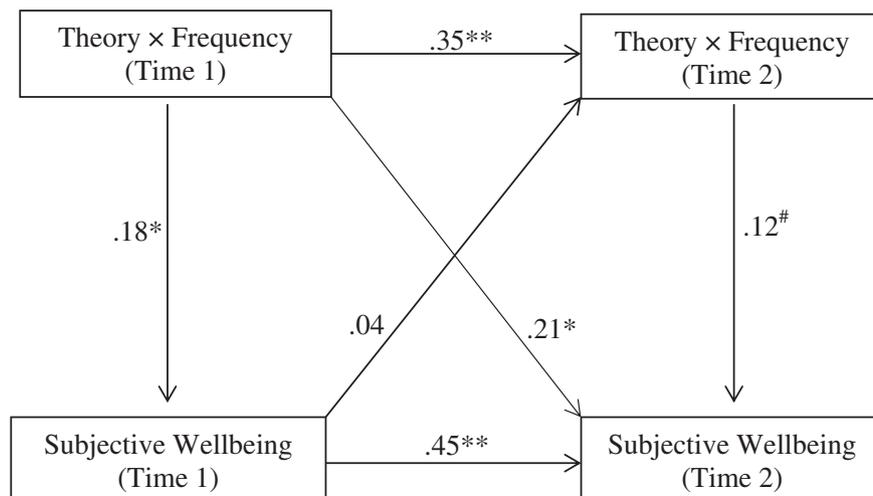

Fig. 1. Cross-lagged panel correlation analysis investigating the effect of smile-theory × smile-frequency on subjective wellbeing (Study 1). Note: $^{**}p < .01$, $^{*}p < .05$, $^{\#}p = .07$.

Study 2: Manipulating smile vs. non-smile frequency

Method

85 undergraduate students (23 male, $M_{age} = 19.01$, $SD = 1.26$) from the University of Toronto participated for course credit. This study followed a 2 (smile-theory: reactive vs. proactive) × 2 (frequent facial-muscular action: smile vs. non-smile) between-subjects design.

Participants were instructed that they would complete three unrelated studies for different researchers. The first "study" manipulated smile-theory and was described as a daily experience diary. Participants were instructed that experimenters were collecting an inventory of everyday experiences and that they would be asked to recall such experiences. They were then randomly assigned to the reactive or proactive theory condition. Those assigned to the reactive theory condition were instructed that people smile because they feel happy, for example, they may smile when they meet with a friend they haven't seen for a long time, when they win a prize, and when they watch funny videos. They were further instructed that as researchers were collecting an inventory of such situations where people smile because they feel happy, they should list a situation where they smile because they feel happy. Participants assigned to the proactive theory condition were instead instructed that people smile because they want to feel happy, for example they may smile because they can fix their own bad mood, lighten the mood in social situations, and comfort and encourage themselves. The remainder of the instruction was identical to that in the reactive theory condition, except that any reference to feeling happy was replaced by trying to feel happy. To ensure the two manipulations were not differentially engaging, after providing the description, participants were asked to evaluate the task (0 = not at all involving, not at all interesting, to 10 = very involving, very interesting). Responses to these two items, $r = .73$, $p < .001$, were averaged.

Participants were thanked for completing this study and directed to the next study which was on facial muscular exercises. They were instructed that researchers from the biology department were testing whether simple facial muscular exercises can help reduce wrinkles. Under this guise, participants assigned to the smile-frequently condition were asked to place a pen gently between their front teeth, without it touching their lips, and hold it there for 2 s before removing it. They were asked to repeat this procedure ten times, for 2 s each time (Strack et al., 1988). In the non-smile condition, participants were instead instructed to put the pen gently between their lips and to puff their cheeks, and repeat ten times (for 2 s each time). To ensure that the two tasks did not differ in ease, engagement, or participant willingness to perform the exercises, participants evaluated the task they had just completed (1 = very easy to perform, not engaging, did not follow the instructions, 7 = very hard to perform, very engaging, followed instructions perfectly). Four students did not follow the instructions to perform the assigned facial muscular exercises due to hygiene concerns, and their data were excluded from further data analyses, leaving data from 81 participants for further analyses.

Then, after completing a short filler task, participants responded to the satisfaction with life scale (Diener et al., 1985; α = .83). Finally, they provided demographic information, and were thanked and funnel-debriefed. No participant correctly guessed the true purpose of the study.

Results and discussion

Manipulation check

All participants successfully listed instances of reactive or proactive smile-theory, based on condition they were assigned to, and the two smile-theory manipulations did not differ in how engaging or interesting they were rated, $ps > .20$. Also, the facial muscular exercises did not differ between the smile and non-smile conditions in terms of difficulty, engagingness, and following instructions, all $Fs < 1$.
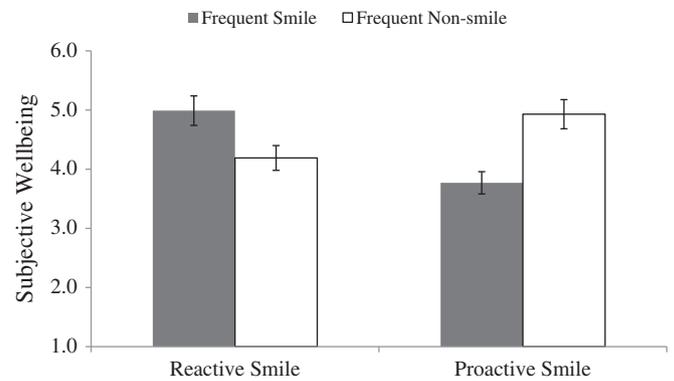
Fig. 2. Subjective wellbeing as a function of manipulated smile-theory and manipulated smile-frequency (study 2). Note: Error bars represent confidence interval (95%).

Wellbeing

An ANOVA on the wellbeing index with smile-theory and action type as independent variables yielded the expected interaction between theory and action, $F(1, 77) = 12.44$, $p = .001$; $\eta^2 = .13$ (see Table 1 and Fig. 2). Participants primed with reactive smile-theory reported higher levels of happiness after performing the smile exercise ($M = 4.99$, $SD = 0.95$) rather than the non-smile exercise ($M = 4.19$, $SD = 1.26$), $F(1, 77) = 4.07$, $p = .04$. In contrast, participants primed with proactive smile-theory reported lower levels of happiness when they performed the smile ($M = 3.77$, $SD = 1.40$) rather than non-smile exercise ($M = 4.93$, $SD = 1.23$), $F(1, 77) = 9.53$, $p = .003$.

In this study we thus conceptually replicated and extended findings of study 1, but instead manipulated rather than measured smile-theory. We also directly manipulated the type of frequent facial action, and compared the effects of frequent smiling versus non-smiling action on wellbeing. Our objective in Study 3 is to provide direct evidence that smile-theory moderates the effect of smile-frequency on current happiness, which in turn impacts wellbeing. Also, in Study 3 we manipulated smile-frequency but measured smile-theory.

Study 3: When frequent smiling reduces experienced happiness

Method

Sixty-three undergraduate students (22 male, $M_{age} = 20.00$, $SD = 1.72$) from the University of Toronto participated for course credit. Once seated in the lab after signing a consent form, each participant received a set of questionnaires, studies ostensibly being conducted for several researchers. We first measured participants' smile-theory (1 = people smile to feel good; 7 = people smile when they feel good). To reduce attention to this measure and a possibility of self-generated validity/demand effects, this item was presented as part of demographic measures collected at the beginning of the session.

Next, participants were randomly assigned to a frequent-smiling or infrequent-smiling condition. In what was labeled as a "picture evaluation study," participants were instructed that experimenters were testing pictures for future use in studies and would like their opinion on how funny the pictures are. If they found the pictures funny, they should smile. In the infrequent smiling condition, participants were presented with one funny picture, while in the frequent smiling condition, they viewed ten funny pictures. Right after they viewed each picture, participants indicated whether the picture was funny and made them smile, along a 3 item scale ("This picture is…" 1 = not funny, did not make me smile, I don't like it; 7 = very funny, made me smile, I like it). Participants also reported their happiness ("How do you feel right now?" 1 = sad, 7 = happy).

Following an extended filler task (unrelated studies), and to assess wellbeing, the second relevant survey comprised the same Satisfaction with Life Scale (Diener et al., 1985; α = .84). Participants were then

thanked and funnel-debriefed. No participant correctly guessed the purpose of this study.

Results and discussion

Manipulation check

We averaged participants' responses to the three evaluation questions for each picture ($\alpha \geq .88$ for all the pictures). A smile-theory (mean-centered) $\times$ smile-frequency regression on evaluation of the picture common to both smile-frequency conditions only revealed a significant main effect of smile-theory (at $\pm$ 1SD, $M_{\text{proactive}} = 5.95$, $M_{\text{reactive}} = 5.17$), b $= -.27$, SE $= .09$, $t(59) = -2.86$, $p < .01$, $\eta^2 = .13$; other $ps > .52$. A smile-theory (mean-centered) $\times$ smile-frequency regression on the averaged evaluation of the ten pictures in the frequent-smiling condition and single picture in the infrequent-smiling condition also only revealed a significant main effect of smile-theory (at $\pm$ 1SD, $M_{\text{proactive}} = 5.75$; $M_{\text{reactive}} = 4.87$), b $= -.28$, SE $= .08$, $t(59) = -3.42$, $p < .01$, other $ps > .07$. In addition, the picture common to the frequent and infrequent smiling conditions was rated significantly higher than the midpoint ($M = 5.52$, $SD = 1.64$), $t(62) = 9.75$, $p < .05$, as were the nine additional pictures used in the frequent smiling condition ($M = 4.67$, $SD = 1.57$), $t(62) = 3.74$, $p < .01$, suggesting that the pictures made participants smile, and did so more frequently (but not more intensely) in the frequent smiling condition.

Wellbeing

We performed a regression analysis on subjective wellbeing with frequency of smile (-1 = infrequent smiling; 1 = frequent smiling), mean-centered smile-theory ($M = 4.46$, $SD = 2.15$; unlike in study 1, this mean was not significantly different from the mid-point), and their interaction as independent variables. As expected, this analysis revealed a significant interaction, b $= .41$, SE $= .08$, $t(59) = 4.95$, $p < .01$. To explore the interaction, we examined the effects of smile-theory via a spotlight analysis ($\pm$1SD; see Table 1, Fig. 3). As predicted, among the participants who believe that smiling is reactive (reflecting happiness), wellbeing was higher after they had smiled frequently ($M = 5.47$) rather than infrequently ($M = 4.17$), b $= .66$, SE $= .21$, $t(59) = 3.15$, $p < .01$. The reverse was true among participants who believed smiling is proactive (pursuing happiness) — ironically, frequent smiling resulted in less wellbeing ($M = 3.55$) than infrequent smiling ($M = 5.73$), b $= -1.10$, SE $= 0.19$, $t(59) = -5.80$, $p < .01$.

Experienced happiness

The process measure of experienced happiness revealed a significant interaction between smile-frequency and smile-theory, b $= .33$, SE $= .07$, $t(59) = 4.72$, $p < .01$. As expected, among the participants who

believe that smiling is reactive, frequent smiling ($M = 5.51$) increased experienced happiness compared to infrequent smiling ($M = 4.68$), b $= .42$, SE $= .19$, $t(59) = 2.16$, $p < .05$. The reverse was true for proactive-smile participants; frequent smiling ($M = 3.68$) reduced happiness compared to infrequent smiling ($M = 5.67$), b $= -1.01$, SE $= .24$, $t(59) = -4.28$, $p < .01$.

Mediating role of happiness

We proposed that smile-theory moderated the effect of smiling on experienced happiness, and experienced happiness impacted people's wellbeing. As predicted, regression analysis showed a significant effect of smile-theory $\times$ smile-frequency on experienced happiness, b $= .33$, SE $= .07$, $t(59) = 4.72$; $p < .01$, on subjective wellbeing, b $= .41$, SE $= .08$, $t(59) = 4.95$, $p < .01$, and of happiness on subjective wellbeing, b $= .94$, SE $= .09$, $t(59) = 10.80$, $p < .001$. When experienced happiness was included as a covariate in the regression predicting an effect of smile-theory $\times$ smile-frequency on subjective wellbeing, the interaction became marginal, b $= .12$, SE $= .07$, $t(58) = 1.85$, $p = .07$, but experienced happiness remained significant, b $= .86$, SE $= .10$, $t(58) = 8.26$, $p < .01$, showing that smiling lay theory and smile-frequency jointly impacted experienced happiness which in turn impacted subjective wellbeing. The bootstrap mediation analysis (Preacher & Hayes, 2008) further confirmed that participants' happiness mediated the smile-theory $\times$ smile-frequency interaction effect on subjective wellbeing (95% CI of the indirect path coefficient: [.02, .30], excluding 0, based on 1000 bootstrap samples).

In sum, we found that people's happiness depends not only on frequency of smiling, but also on their naïve theories — whether people associate smiling with reflecting happiness or with pursuing happiness, and that current happiness impacts judgment of wellbeing. Notably, participants in our study provided their affective response much in advance of reporting their well-being, yet the experience of affect carried over to the judgment of wellbeing. This finding increases confidence that our findings are not a result of socially desirable responding.

Conclusion

There is nothing good or bad, but thinking makes it so.

[Shakespeare]

From economists, to philosophers, politicians, psychologists, and laypersons, increasing wellbeing is and has been a universally important concern, and happiness is an important precursor of wellbeing. As early as 1822, Bentham suggested that wealth of a nation be measured by the wellbeing of its people and today, the nation of Bhutan employs a Gross Happiness Index rather than Gross Domestic Product to reflect the wellbeing of its people. It is also widely believed that when feeling bad, positive experiences can improve happiness, and one factor that can increase positive feelings is smiling. The proposed idea essentially is fake it to make it. However, we show that people who associate smiling with fake happiness (because they smile to become happy rather than when they feel happy) end up feeling less happy after smiling, and this feeling reduces their wellbeing.

Across three studies, we showed that people have different naïve theories regarding why they smile (Erber & Erber, 2001; Labroo & Mukhopadhyay, 2009; Mauss, Tamir, Anderson, & Savino, 2011; Tamir, John, Srivastava, & Gross, 2007), and these theories along with frequency of smiling impact a person's wellbeing by impacting current happiness. We showed these effects on wellbeing in a longitudinal field study measuring individual differences in smile-theory and smile-frequency (Study 1), and in two lab studies manipulating smile-theory and/or actual smile-frequency (Studies 2–3). Study 3 additionally provided direct evidence that smiling more often can make a person
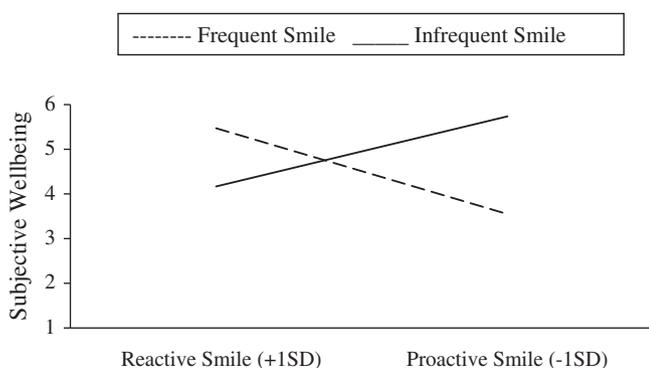

-------- Frequent Smile _____ Infrequent Smile

Fig. 3. Subjective wellbeing as a function of measured smile-theory and manipulated smile-frequency (study 3).

less happy and the reduced happiness impacts wellbeing adversely. This finding is important because it shows that a simple smile that should be a person's most powerful means of becoming happy can backfire and make some person become less happy.

Our experienced happiness results are particularly surprising because while subjective wellbeing is a constructed judgment, experienced happiness is usually believed to be a spontaneous affective response (Schwarz & Clore, 1983). Future research should investigate more systematically whether our results pertaining to happiness arise because people make different inferences about their happiness based on their naïve theories if they somehow sense that they are smiling or whether people actually experience less happiness from frequent smiling when they believe that smiling is proactive. For example, research could employ physiological measures of happiness to ensure that people who smile proactively or in situations when people smile proactively, negative emotion is truly evoked. If people's theories are found to change the experience of happiness, then research should further investigate how they change the experience of happiness. One possibility is that different smile-theories differentially impact the way people smile, and reactive theories result in people employing a more natural genuine smile but proactive theories result in people employing a fake smile, and these different types of smile differentially impact happiness. Existing research indeed distinguishes between two types of smiles — genuine Duchenne smiles and fake non-Duchenne smiles (Duchenne, 1990; Ekman, Davidson, & Friesen, 1990). It is possible that reactive smiling which is a response to genuine happiness evokes Duchenne smiles but proactive smiling which involves faking happiness evokes non-Duchenne smiles. If so, reactive smile theories, happiness and Duchenne smiles may be associated with each other and proactive smile theories, lack of happiness and non-Duchenne smile may be associated with each other. As a result, reactive smile theories may evoke true smiles but proactive smile theories fake smiles and frequent smiling would then increase happiness among those who smile reactively but reduce happiness among those who smile proactively. If however, people are found to be making constructed judgments regarding happiness, future research could test the extent to which a person has to explicitly be aware of smiling, and whether awareness of a biasing effect of theory on perceived happiness levels can help correct the self-reported levels of happiness and wellbeing. Thus, understanding how and why happiness changes as a function of smile theory and frequency is important because it could shed light on the genesis of facial feedback and how smile might evoke different emotions in different populations over time.

From a practical standpoint, our data imply that making people who are feeling bad smile could backfire and make them feel (or at least think they feel) worse because they may interpret smiling as trying to become happy. Smiling frequently would remind them of being not happy. For them, not smiling until the emotion is resolved may be best. In addition, for people who smile a lot, an easy way to increase happiness might be to remind them that "a smile is a reflection of happiness." In contrast, for people who do not smile often, it may be best to advise them that "a smile is an attempt to become happy."

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