Consciousness and Cognition 33 (2015) 135–144

Contents lists available at ScienceDirect

Consciousness and Cognition

journal homepage: www.elsevier.com/locate/concog

Love is the triumph of the imagination: Daydreams about significant others are associated with increased happiness, love and connection

Giulia L. Poerio [a,*], Peter Totterdell [a], Lisa-Marie Emerson [a], Eleanor Miles [b]

[a] Department of Psychology, The University of Sheffield, UK
[b] School of Psychology, University of Sussex, UK

ARTICLE INFO

Article history:
Received 28 August 2014

Keywords:
Daydreaming
Mind wandering
Emotion regulation
Close relationships
Experience sampling

ABSTRACT

Social relationships and interactions contribute to daily emotional well-being. The emotional benefits that come from engaging with others are known to arise from real events, but do they also come from the imagination during daydreaming activity? Using experience sampling methodology with 101 participants, we obtained 371 reports of naturally occurring daydreams with social and non-social content and self-reported feelings before and after daydreaming. Social, but not non-social, daydreams were associated with increased happiness, love and connection and this effect was not solely attributable to the emotional content of the daydreams. These effects were only present when participants were lacking in these feelings before daydreaming and when the daydream involved imagining others with whom the daydreamer had a high quality relationship. Findings are consistent with the idea that social daydreams may function to regulate emotion: imagining close others may serve the current emotional needs of daydreamers by increasing positive feelings towards themselves and others.

1. Introduction

Social interactions and relationships are vital for a healthy, happy and meaningful life (e.g. Baumeister, Vohs, Aaker, & Garbinsky, 2012; Diener & Seligman, 2002; Holt-Lunstad, Smith, & Layton, 2010) and contribute to daily emotional well-being. For example, people report feeling happiest when socializing (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) and during interactions with friends (Csikszentmihalyi & Hunter, 2003), and feelings of social connectedness are predicted by social activities and supportive interactions (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Despite the emotional benefits of social interaction, a substantial portion of each day is typically spent in the absence of social activity and/or separated from close significant others (e.g. at work). However, even in the absence of social interaction the mind will invariably drift to imagine others and mentally simulate past and possible future social scenarios. Estimates suggest that we spend an inordinate amount of time daydreaming (Klinger & Cox, 1987), which is often social in nature (Mar, Mason, & Litvack, 2012). What would the impact of imagining others during daydreaming activity be on momentary feelings: could the influence of others on emotional well-being emerge from the imagination as well as from real events? In the present research we use

* Corresponding author at: Department of Psychology, The University of Sheffield, Western Bank, Sheffield S10 2TP, UK.
E-mail addresses: g.poerio@sheffield.ac.uk (G.L. Poerio), p.totterdell@sheffield.ac.uk (P. Totterdell), l.emerson@sheffield.ac.uk (L.-M. Emerson), e.miles@sussex.ac.uk (E. Miles).

http://dx.doi.org/10.1016/j.concog.2014.12.011
1053-8100/

experience sampling to explore whether everyday social daydreams are associated with increased positive social emotion and whether this depends on who is being daydreamed about.

1.1. Daydreaming and its social content

Whilst reading a novel, walking to work, or during everyday activities, the mind has a proclivity to drift to unrelated thoughts, images and feelings. Such daydreaming activity can occur as mind-wandering when attention becomes decoupled from one's current task (Smallwood & Schooler, 2006) but can also occur when there is no specific task at hand, such as during a commute to work or when relaxing on a beach (Klinger, 2009). Daydreaming can be defined as mental content experienced during a state of normal waking consciousness that is stimulus-independent and task-unrelated, because it is neither a direct reflection of the current sensory environment nor related to the thinker's current mental or physical task (e.g. Stawarczyk, Majerus, Maj, Van der Linden, & D'Argembeau, 2011). Defined in these ways, daydreaming occupies a substantial proportion of waking thought – a figure estimated to be between 30% and 50% (Killingsworth & Gilbert, 2010; Klinger & Cox, 1987) – and is thought to represent a psychological baseline to which people return in the absence of external demands (Mason et al., 2007).

Daydreams are proposed to reflect an individual's current goal commitments and they occur when individuals' encounter goal-relevant cues in situations that do not lend themselves to attaining those goals (Klinger, 1975; Klinger, 1996; Klinger, 2009; Klinger, 2013). For example, hearing a friend's name in a song on the radio may act as a reminder that the friend has an upcoming birthday, which then triggers thoughts and images about what gift to give, what the birthday party might be like, who will be there, and what conversations might unfold. In this way, daydreams are goal-relevant and involve mentally pursuing or seemingly attaining goals when doing so in reality is not possible (Baird, Smallwood, & Schooler, 2011; Klinger, 2013).

Building upon this, emerging evidence indicates that daydreaming may be predominately social in nature and centered on *social* goals and needs. This is unsurprising given that the need to feel close and connected with others is fundamental and drives behavior and thought content towards the formation and maintenance of close, positive social bonds (Baumeister & Leary, 1995; Ryan & Deci, 2000). Mar et al. (2012) demonstrated that 73% of a large sample ($N = 17{,}556$) reported that other people are 'frequently' or 'always' involved in their daydreams whilst less than 1% reported that others are 'never' involved. Likewise, Song and Wang (2012) found that other people featured in 71% of sampled task-unrelated thoughts, and Andrews-Hanna et al. (2013) provide evidence that the tendency to think about others represents a major dimension of thought content. Neuroimaging data also lends converging support for the social nature of daydreams; A meta-analysis of 12 neuroimaging studies reported substantial overlap between brain regions involved in daydreaming and those involved in social cognition, suggesting a predisposition to generate social thoughts during daydreaming activity (Schilbach, Eickhoff, Rotarska-Jagiela, Fink, & Vogeley, 2008).[1]

1.2. Daydreaming and emotion

Why would daydreams influence feelings? Daydreams are imaginary experiences that resemble their simulated target, generally via visual and auditory imagery (Andrews-Hanna et al., 2013; Klinger & Cox, 1987). Imagining events or experiences can evoke the feelings that would arise if the simulated event were occurring (Kosslyn, Ganis, & Thompson, 2001). Indeed, the capacity of imagination to evoke and change feelings associated with the imagined subject matter is well established. Asking participants to imagine emotional events is a widely used technique to induce desired mood states (Westermann & Spies, 1996) and guided imagery is often employed in therapeutic interventions to promote positive feelings and reduce negative feelings (e.g. Hutcherson, Seppala, & Gross, 2008; Lewis, O'Reilly, Khuu, & Pearson, 2013; Panagioti, Gooding, & Tarrier, 2012). Given the capacity of the imagination to evoke feeling states, it seems plausible that social daydreams would induce social feelings associated with the imagined experience and underlying social goals and needs. Social daydreams may therefore play a role in shaping people's everyday feelings in relation to their social goals and needs, such as feelings of love and connection.

Previous research regarding the link between daydreaming and emotional well-being has tended to focus on its relationship with negative affect. For example, there is evidence to suggest that daydreaming may be detrimental to well-being due to its associations with dysphoria (Smallwood, O'Connor, Sudbery, & Obonsawin, 2007), depression (Carriere, Cheyne, & Smilek, 2008; Giambra & Traynor, 1978), rumination and self-focused attention (Marchetti, Van de Putte, & Koster, 2014) and feeling less happy in daily life (Killingsworth & Gilbert, 2010). However, research increasingly acknowledges that daydreaming is unlikely to be a homogenous experience and has begun to explore the conditions under which daydreaming is associated with negative and positive emotion. For example, the relationship between daydreaming and emotion may depend on its phenomenological and emotional content (Andrews-Hanna et al., 2013; Poerio, Totterdell, & Miles, 2013), temporal focus (Ruby, Smallwood, Engen, & Singer, 2013), interest in thought content (Franklin et al., 2013), personal lay theories (Mason, Brown, Mar, & Smallwood, 2013) and current depressive symptomology (Marchetti, Koster, & De Raedt, 2012). As an

[1] This research concerned the Default Mode Network rather than daydreaming per se. Although the DMN is widely considered to be activated during daydreaming activity, it also has other functions, which may be independently associated with social cognition.

extension to these factors we propose that the *social* content of daydreaming will also have an impact on how daydreaming relates to emotional well-being and, in particular, to positive social feelings rather than negative emotion more generally.

Research supports the proposition that imagining interactions and relationships can have a positive impact on social feelings. For example, across two studies, Kumashiro and Sedikides (2005) found that participants instructed to visualize a close positive relationship expressed warmer and more positive other-directed feelings compared to participants who had visualized a close negative, or neutral, relationship. Additionally, a large body of research on imagined contact indicates that imagining positive and neutral interactions with out-group members can promote positive feelings towards others including positive affective attitudes, increased out-group trust, and reduced inter-group anxiety (Miles & Crisp, 2014). These findings indicate that deliberately imagining interactions and interpersonal relationships can evoke positive social feelings. Whether similar effects apply to naturally occurring social daydreams that derive from an individual's personal goals, rather than laboratory-based directed mental simulations, is an open question. However, recent correlational evidence has associated the tendency to daydream about close others with greater socio-emotional well-being (Mar et al., 2012). Daydreams about non-close others did not show a positive association with well-being, which suggests that the quality of the relationship in the daydream may be important. Given that interactions within close relationships are most likely to elicit positive social feelings in daily life (e.g. Laurenceau, Barrett, & Rovine, 2005) daydreams about close others may be especially likely to elicit positive social feelings.

Another factor that may influence social feelings is the thematic content of social daydreams. The social goals underlying and influencing daydreams may be approach-oriented, i.e., concerned with the attainment of positive end-states (e.g. affiliation) or avoidance-oriented, i.e. concerned with the prevention of negative end-states (e.g. social rejection). Daydreams involving the mental pursuit of social approach goals would be more likely than those involving social avoidance goals to be associated with positive social feelings because the former engages positive cognitions and the latter engages negative cognitions (Elliot, Sheldon, & Church, 1997; Tamir & Diener, 2008). Although individual social daydreams may be associated with increased or decreased positive social feelings, there is also reason to suspect that, as a general pattern, social daydreams will be associated with increased positive social feelings. We make this prediction from a study by Johannessen and Berntsen (2010) that assessed participants' current goal commitments which often referred to social life categories including "love, intimacy and sexual matters" and "friends and acquaintances". Importantly, participants reported their specific goals to be related to achievement rather than avoidance. This suggests that daydreams will be predominately associated with mentally pursuing desired social goals, which in turn, should increase the positive social feelings associated with their imagined pursuit or attainment.

1.3. The present research

Building on the ideas presented above, we sought to explore whether social daydreams would be associated with increased social feelings by choosing to focus on feelings of love and connection. We used experience sampling methodology (Bolger, Davis, & Rafaeli, 2003) to examine naturally occurring daydreams and associated feelings. In addition to reports of social daydreams and social feelings, we sampled non-social daydreams and non-social feelings to serve as points of comparison. On the assumption that social daydreams commonly represent attempts to mentally pursue social approach goals we predicted that social daydreams, but not non-social daydreams, would be associated with increased love and connection. We did not make specific predictions about whether social and non-social daydreams would differ in their association with changes in non-social feelings. Daydreams with and without social content could both relate to changes in non-social feelings. We also measured the emotional content of daydreams to rule out the possibility that the predicted increases in social feelings could be attributed to the emotional, rather than social, content of daydreaming. In addition to our main prediction, we explored whether the effect of social daydreams on social feelings might depend on who was involved in the daydream by measuring the relationship quality between the daydreamer and the most central other person involved. We predicted that relationship quality would moderate the effect of social daydreams on positive social feelings whereby daydreams involving higher quality relationships would be positively associated with increases in positive feelings.

2. Method

2.1. Participants

One hundred and one volunteers (81 women, 20 men; M_{age} = 22.32 years, SD = 5.17) were recruited to the study. It was described as an investigation into the content and nature of daydreams and advertised via email, flyers at a public engagement event, personal contacts and referrals. Of the participants, 49 were undergraduate psychology students, 22 were postgraduate students, 20 were in full-time employment, and 10 were non-psychology undergraduate students. In exchange for their participation, undergraduate psychology students were given study credits; all other volunteers were entered into a prize draw to win shopping vouchers equivalent to $33, $50 and $83.

2.2. Experience sampling protocol

We used a signal-contingent experience sampling protocol (Wheeler & Reis, 1991) to sample daydreaming and associated feelings. Participants were signaled four times via text messages to their cell phones to answer online questionnaires about

their two most recent social and two most recent non-social daydreams. The questionnaires were answered by following a survey link sent within the messages. Participants received the four messages on one day between 10 am and 10 pm at individually randomized times within four three-hour blocks (between 10:00–13:00, 13:00–16:00, 16:00–19:00, 19:00–22:00), with the constraint that consecutive signals were at least one hour apart. The order of the questionnaires (social, non-social) was also individually randomized for each participant. We randomized the time and order of questionnaires to prevent anticipation of signals, to sample daydreams and feelings across a range of times and daily activities, and to counteract potential order effects and demand characteristics. Measures were kept brief so as not to unduly interfere with participants' daily routine.

2.3. Measures

2.3.1. Social feelings

Two items, taken from Crocker, Niiya, and Mischkowski (2008), measured the positive, other-directed feelings of love and connection. Participants indicated how loving (*"How loving did you feel before/after your daydream?"*) and connected with others (*"How did you feel before/after your daydream?"*) they felt before and after their daydream on 7-point scales from *not at all* to *extremely*.

2.3.2. Non-social feelings

Participants indicated how they felt before and after their daydream (*"How did you feel before/after your daydream?"*) on the following dimensions: sad-happy, anxious-calm, and excited-bored (reverse-scored). Responses were made on a 7-point scale (e.g. 1 = *sad*, 7 = *happy*). These items were chosen to measure the pleasure (valence) and arousal (activation) dimensions of core affect (Remington, Fabrigar, & Visser, 2000); specifically, pleasure (*sad-happy*), pleasant deactivation (*anxious-calm*) and pleasant activation (*bored-excited*).

2.3.3. Emotional content

A single item measured the emotional content of daydreams. Participants indicated the emotional content of their daydream (*"The emotional content of this daydream was…"*) on a 7-point scale (1 = *very negative*, 4 = *neutral*, 7 = *very positive*).

2.3.4. Relationship quality

Three items were used to provide a quality index of the relationship between participants and the most central person involved in their daydream. Participants rated their general feelings of closeness (*"In general, how close do you feel to them?"*), liking (*"In general, how much do you like them?"*), and trust (*In general, how much do you trust them?"*) towards the most central person in their daydream on 7-point scales from *not at all* to *extremely*. These items were chosen to reflect indicators of high-quality interpersonal connections (Niven, Holman, & Totterdell, 2012). We combined items to create an overall score for relationship quality; internal reliability was high, $\alpha = .92$.

2.4. Procedure

Participants attended an individual training session during which they were given a written and verbal description of daydreaming. A daydream was defined as a series of connected thoughts and/or images where that mental content is not about whatever mental or physical activity one is engaged in at the present moment. Participants were told that daydreams could be brief but should consist of more than a single thought or image. Social daydreams were defined as daydreams where another (real or imaginary) person or people are involved; non-social daydreams were defined as daydreams that did not involve another person or people. Examples of daydreams, including social and non-social ones, were provided. When participants indicated that they understood what counted as daydreaming, they were provided with written instructions for the study followed by a demonstration of the text message with online questionnaire link and verbal explanation of the meaning and response of each questionnaire item. Finally, participants nominated a date to complete the study and were free to choose whatever day they liked as long as it represented a typical day in their life.

On the nominated day, participants followed the online questionnaire link sent via text and, after entering their unique participation number, indicated their social and non-social feelings before and after their last (social or non-social) daydream. All five items referring to feelings were asked twice (with reference to before and after the daydream) but the order of all 10 question items was individually randomized to minimize response bias. Participants then rated the emotional content of their daydream, and for social daydreams, completed items indexing relationship quality. Participants were asked to report on their last social or non-social daydream before each text message but were not asked about the time lapse between the daydream and reporting its content. Participants were also asked to provide a short description of the daydream. Several additional questions regarding the daydream were also asked but were not relevant to the hypotheses tested here.

3. Results

3.1. Response rate

Overall, 383 of a possible 404 daydreaming questionnaires were completed (192 social and 191 non-social daydreams) corresponding to a 95% response rate. Participants' daydream descriptions were examined by the first author, in line with

the definitions given to participants, to ensure that daydreams were accurately categorized as social or non-social. Twelve non-social daydreams were excluded from the dataset because they contained references to other people which suggested that they may have been instances of social, rather than non-social, daydreams. We chose not to reclassify these as social daydreams because doing so would have led to an unbalanced design. Therefore, the following analyses were based on 179 non-social and 192 social daydreams.

3.2. Were social daydreams associated with increases in positive feelings?

To examine whether social, compared to non-social, daydreams were associated with increases in positive feelings, we conducted a series of 2 × 2 × 2 (Daydream Type [social, non-social] × Time [pre, post] × Questionnaire [questionnaire 1, questionnaire 2]) triply repeated-measures ANOVAs with each feeling state (i.e. happiness, calmness, excitement, loving and connected) as the dependent variable. The results of these analyses are presented in Table 1.

3.2.1. Social feelings

There was a significant interaction between daydreaming type and time on feeling loving ($F(1,73) = 14.70$, $p < .001$, $\eta_p^2 = .17$). Post-hoc repeated measures *t*-tests indicated that participants reported feeling significantly more loving after ($M = 4.86$, $SD = 1.23$) compared to before ($M = 4.20$, $SD = 1.17$) social daydreams ($t(73) = -3.64$, $p = .001$, $d = -.39$, 95%CI [−.75, −.21]) and significantly *less* loving after ($M = 3.70$, $SD = 1.34$) compared to before ($M = 3.92$, $SD = 1.06$) non-social daydreams ($t(73) = 2.06$, $p = .043$, $d = .18$, 95%CI [.01,.45]). Similarly, there was a significant interaction between daydreaming type and time on feeling connected with others ($F(1,73) = 14.28$, $p < .001$, $\eta_p^2 = .16$). Repeated measures *t*-tests indicated that participants reported feeling significantly more connected with others after ($M = 4.67$, $SD = 1.23$) compared to before ($M = 4.22$, $SD = 1.26$) social daydreams ($t(73) = -3.40$, $p = .001$, $d = -.39$, 95%CI [−.70, −.19]). Participants also reported feeling marginally less connected with others after ($M = 3.61$, $SD = 1.28$) compared to before ($M = 3.80$, $SD = 1.18$) non-social daydreams ($t(73) = 1.89$, $p = .063$, $d = .15$, 95%CI [−.01, .38]), although this result was statistically non-significant. Overall, social daydreams were associated with increased, whereas non-social daydreams were associated with decreased, feelings of love and connection (see Fig. 1).

3.2.2. Non-social feelings

There was a significant interaction between daydreaming type and time on happiness ($F(1,73) = 5.72$, $p = .019$, $\eta_p^2 = .07$). Post-hoc repeated measures *t*-tests indicated that participants reported feeling significantly happier after ($M = 4.91$, $SD = 1.23$) compared to before ($M = 4.53$, $SD = 1.06$) social daydreams ($t(73) = -2.67$, $p = .009$, $d = -.33$, 95%CI [−.64, −.10]), but not non-social daydreams ($t(73) = .88$, $p = .383$, $d = .09$, 95%CI [−.14,.35]). Social daydreams were associated with increased happiness but there was no change in happiness for non-social daydreams (see Fig. 1).

The same interaction effect was not observed for feelings of calmness or excitement. However, there was a significant main effect of time for these feelings. Participants were significantly less calm after ($M = 4.50$, $SE = .14$) compared to before ($M = 4.82$, $SE = .13$) daydreaming ($F(1,73) = 7.74$, $p = .007$, $\eta_p^2 = .10$) and significantly more excited after ($M = 3.31$, $SE = .10$) compared to before ($M = 4.20$, $SE = .11$) daydreaming ($F(1,73) = 68.06$, $p < .001$, $\eta_p^2 = .48$). This suggests that daydreaming was associated with decreased calmness and increased excitement, which may be indicative of an overall increase in the arousal dimension of core affect.

Table 1
Summary of 3-way repeated-measures ANOVAs for each emotion.

	Main effects			2-Way interactions			3-Way interaction
	Daydream type	Time	Questionnaire	Type × Time	Type × Quest	Time × Quest	Type × Time × Quest
Emotion							
Loving	32.82***	2.70	0.20	14.70***	0.97	0.18	0.61
Connected	43.10***	2.52	6.93**	14.28***	0.01	1.67	0.34
Happiness	10.02*	2.87	0.06	5.72*	0.83	0.02	0.16
Calmness	5.43*	7.74**	0.05	3.11	6.67*	0.03	0.56
Excitement	13.87***	68.06***	2.93	0.40	0.25	1.39	0.45

Note. Values are *F*-values.
Main effects of daydreaming type on calmness and excitement were a result of greater mean ratings of calmness and excitement for social compared to non-social daydreams. The daydreaming type × Questionnaire interaction for calmness appeared to be driven by greater overall ratings of calmness for social compared to non-social daydreams on the second set of questionnaires. The main effect of questionnaire for feelings of connection suggests that participants tended to report feeling more connected when answering questionnaires later in the day. Effects specific to our research questions are described in the text.

* $p < .05$.
** $p < .01$.
*** $p < .001$. All df were 1, 73.

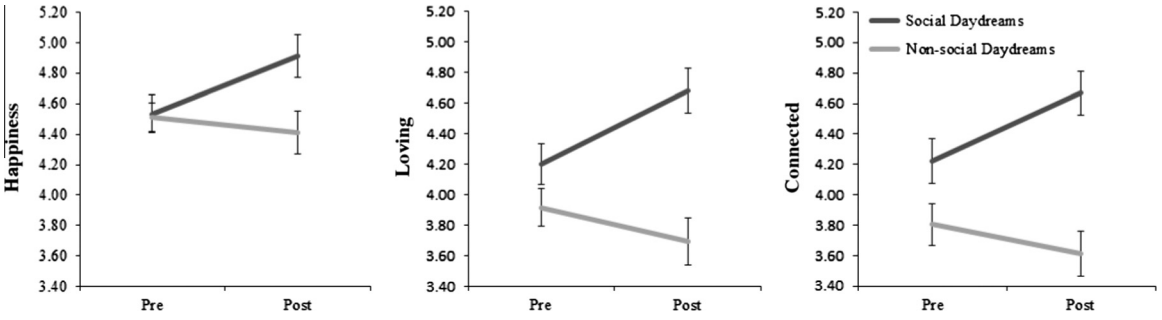

Fig. 1. Interactions between daydreaming type and time (pre- and post-daydream) for feelings of happiness, loving and connected. Error bars represent 95% confidence intervals.

3.3. Post-hoc analysis: Were social daydreams regulating people's feelings?

Our results indicate that social, but not non-social, daydreams were associated with increased happiness, love and connection. We were interested in whether this effect might be regulatory; that is, whether social daydreams might be compensating for low levels of happiness, love and connection. If that was the case, then we would expect increases in happiness, love and connection to be observed for participants who scored low, but not for those who scored highly, on these feelings *before* daydreaming. To explore this, we created each participant's average scores for feelings of happiness, love and connection before and after social daydreams over the two time samples. We then ran a series of repeated measures *t*-tests to examine differences between feelings of happiness, love and connection before and after social daydreams separately for those 'high' and 'low' in the associated feeling before daydreaming. We classified each participant as 'low' or 'high' using a median split of their average feeling state before social daydreams.

The results were consistent across feeling dimensions: increases in happiness, love and connection were only observed for those participants scoring 'low' and not for those already 'high', on the associated feeling before social daydreaming. Participants low in happiness felt significantly happier after ($M = 4.54$, $SD = 1.14$) compared to before ($M = 3.86$, $SD = .71$), social daydreaming ($t(56) = -4.41$, $p < .001$, $d = -.71$, 95%CI [−.99, −.39]); participants low in feelings of loving felt significantly more loving after ($M = 4.03$, $SD = 1.26$) compared to before ($M = 3.24$, $SD = .92$) social daydreaming ($t(45) = -3.90$, $p < .001$, $d = -.71$, 95%CI [−1.20, −.43]); and participants low in feelings of connection felt significantly more connected with others after ($M = 4.20$, $SD = 1.30$) compared to before ($M = 3.04$, $SD = .99$) social daydreaming ($t(44) = -5.68$, $p < .001$, $d = -.99$, 95%CI [−1.56, −.77]). In contrast, there were no significant differences observed between feelings of happiness, love and connection, before and after social daydreams for participants that were 'high' on the associated affective state before daydreaming (all p's > .1) Inspection of mean scores and 95% confidence intervals also suggests that results for 'high' scorers were not due to a ceiling effect in this group: mean ratings (on a 7 point-scale) and confidence intervals before daydreaming were 5.47 (95%CI [5.32–5.60]) for happiness, 5.11 (95%CI [4.98–5.31]) for love, and 5.19 (95%CI [5.05–5.34]) for connection.

For comparison, we performed the same set of analyses with non-social daydreams. Levels of happiness from before and after non-social daydreams were not different for participants low ($t(57) = -.96$, $p = .340$) or high ($t(40) = 1.41$, $p = .168$) in happiness before non-social daydreaming. Participants low in feelings of love and connection before non-social daydreams did not report significant increases in these feelings after non-social daydreams (loving: $t(59) = -.12$, $p = .906$; connected: $t(42) = -1.22$, $p = .230$). However, participants high in feelings of loving before non-social daydreams felt marginally less loving after ($M = 4.74$, $SD = 1.04$) compared to before ($M = 4.99$, $SD = .57$) non-social daydreams ($t(38) = 1.88$, $p < .068$, $d = .24$, 95%CI [.01, .49]). Similarly, participants high in feelings of connection felt significantly less connected after ($M = 4.36$, $SD = 1.15$) compared to before ($M = 4.77$, $SD = .78$) non-social daydreams ($t(55) = 3.16$, $p = .003$, $d = .40$, 95%CI [.16, .67]).

These results support a regulatory explanation of our findings: the positive emotional outcome of social daydreaming was only found for participants who would benefit from it the most (i.e. 'low' scorers), but not for participants already experiencing positive feelings (i.e. 'high' scorers). The fact that the opposite pattern of results was observed for non-social daydreams also suggests that these effects were not a result of regression to the mean.

3.4. Did the emotional content of social daydreams account for changes in feelings?

We sought to establish whether increases in happiness, love and connection for social daydreams were attributable to the emotional content of those daydreams.[2] Multi-level modeling (Hox, 2010) was used to examine this possibility because the measure of daydreaming emotional content was time-varying. We restructured the data so that time points (i.e. questionnaire responses) were nested within individuals and then ran a series of multi-level models. First, we confirmed that social day-

[2] The means and standard deviations for the emotional content of daydreams were $M = 5.07$, $SD = 1.27$ for social daydreams and $M = 4.44$, $SD = 1.35$ for non-social daydreams.

dreams were associated with increased happiness, love and connection: the fixed effect of time was significant in models predicting happiness ($B = -.29$ (.13), $t(283) = -2.32$, $p = .021$, $ICC = -.15$, 95%CI [−.54, −.04]), loving ($B = -.46$ (.13), $t(281) = -3.66$, $p < .001$, $ICC = -.20$, 95%CI [−.70, −.21]), and connection ($B = -.48$ (.13), $t(281) = -4.07$, $p < .001$, $ICC = -.20$, 95%CI [−.73, −.23]); the respective feelings were significantly greater after compared to before social daydreams.

Next, we included the emotional content of social daydreams as a predictor in each model. The emotional content was a significant ($p < .001$) predictor in all models indicating that the emotional content of daydreams was positively associated with happiness, love and connection, before and after social daydreams. After controlling for the emotional content of daydreams, the fixed effect of time remained significant in models predicting happiness ($B = -.29$ (.12), $t(282) = -2.54$, $p = .012$, $ICC = -.19$, 95%CI [−.52, −.07]), loving ($B = -.46$ (.11), $t(281) = -4.17$, $p < .001$, $ICC = -.27$, 95%CI [−.67, −.24]) and connection ($B = -.48$ (.12), $t(281) = -4.07$, $p < .001$, $ICC = -.25$, 95%CI [−.71, −.25]), indicating that the association between social daydreams and increased happiness, love and connection could not be solely attributed to the emotional content of those daydreams.

3.5. Did the effect of social daydreams on positive feelings depend on relationship quality?

The measure of relationship quality was significantly ($p < .001$) negatively skewed indicating that participants' daydreams overwhelmingly involved significant others. Attempts to transform the variable to normalize the distribution were unsuccessful so a median split procedure was applied (MacCallum, Zhang, Preacher, & Rucker, 2002). We dichotomized the variable to represent 'high' and 'low' quality relationships for the sample: *low* ($n = 186$) = 1–5.67; *high* ($n = 198$) = 6.00–7.00. We then ran multi-level models examining whether feelings of happiness, love and connection, were significantly greater after, compared to before, social daydreams separately for daydreams that involved low, and high quality relationships.

For low quality relationships, the fixed effect of time was non-significant for models predicting happiness ($B = .12$ (.15), $t(113) = .80$, $p = .423$, $ICC = .05$, 95%CI [−.17,.41]), loving ($B = -.09$ (.15), $t(114) = -.53$ $p = .600$, $ICC = -.04$, 95%CI [−.41, .24]) and connection ($B = -.19$ (.15), $t(114) = -1.23$, $p = .223$, $ICC = -.08$, 95%CI [−.51, .12]), indicating no significant change in feelings from before to after daydreaming. In contrast, for high quality relationships, the fixed effect of time was significant in models predicting happiness ($B = -.68$ (.17), $t(118) = -3.94$, $p < .001$, $ICC = -.51$, 95%CI [−1.02, −.34]), loving ($B = -.82$ (.14), $t(119) = -5.82$, $p < .001$, $ICC = -.49$, 95%CI [−1.08, −.53]) and connection ($B = -.75$ (.16), $t(118) = -4.82$, $p < .001$, $ICC = -.38$, 95%CI [−1.06, −.44]), indicating more positive feelings after compared to before daydreaming. Specifically, after daydreams involving high quality relationships, feelings of happiness ($M = 5.41$, $SD = 1.42$), love ($M = 5.43$, $SD = 1.26$) and connection ($M = 5.31$, $SD = 1.28$) were greater than feelings of happiness ($M = 4.74$, $SD = 1.10$), love ($M = 4.63$, $SD = 1.27$) and connection ($M = 4.57$, $SD = 1.47$) prior to daydreaming. These results indicate that social daydreams were associated with increases in feelings of happiness, love and connection, only when participants' daydreams involved people with whom they had a high, but not low, quality relationship.

4. Discussion

We investigated the impact of social daydreams on momentary feelings to explore whether the positive influence of others on emotional well-being could emerge from the imagination as well as from real events. We sampled naturally occurring social and non-social daydreams and associated social and non-social feelings before and after those daydreams using experience sampling methodology.

Because daydream activity is commonly concerned with the mental pursuit of social goals, we proposed that social daydreams would induce positive social feelings associated with the imagined experience and underlying social goals and needs. Our results support this hypothesis; everyday daydreams with social, but not non-social, content were associated with increases in feelings of love and connection. Social daydreams were also associated with increases in happiness which may reflect the tendency for happiness to be a positive emotion linked with social interaction (e.g. Csikszentmihalyi & Hunter, 2003; Kahneman et al., 2004). Our results suggest that people's everyday social feelings are shaped by their imaginary, as well as actual, social worlds, and that daydreams can be a source of positive other-directed feelings.

Importantly, the possibility that increases in happiness, love and connection were due to the emotional content of daydreams was ruled out because increases in these feelings were still present when statistically controlling for emotional content. This suggests that imagining the pursuit of social goals is not simply a pleasant experience, but also one that is associated with a similar emotional outcome to that which would occur as a result of actually pursuing those same goals. Additionally, increased positive feelings were only observed when the relationship between the daydreamer and most central person in the daydream was classified as 'high', paralleling the pursuit of social goals in reality. In the same way that different forms of social interaction differentially contribute to social feelings (Reis et al., 2000), with interactions within close relationships more likely to elicit positive social feelings (e.g. Laurenceau et al., 2005), imagining close others appeared to elicit greater feelings of love and connection. This is also consistent with previous research linking daydreams about close others to socio-emotional well-being (Mar et al., 2012).

Additional analyses support the idea that social daydreams may function to regulate emotion because increases in happiness, love and connection were present only when participants were low, but not high, in these feeling before daydreaming. This pattern of results suggests that social daydreams may have compensated for deficiencies in social feelings serving

the emotional needs of the daydreamer at the time. In daily life, feelings of social disconnection may act as a cue or trigger to pursue or attain goals that would alleviate these feelings (e.g. physical contact with a close other). However, in situations that do not lend themselves to social contact, daydreams may provide an opportunity to simulate desired contact, which fosters feelings of love and connection. In this way, daydreams involving close others may function as an imaginary substitute when close others are not immediately available in reality (*c.f.* Maner, DeWall, Baumeister, & Schaller, 2007; Pickett, Gardner, & Knowles, 2004).

A prediction from this is that, relative to non-social daydreams, daydreams about close others should increase during periods of social disconnection. Future research might explore this during transitional periods where socio-emotional needs are likely to be pertinent (e.g. homesickness, Watt & Badger, 2009), and investigate whether social daydreams can promote adaptation. Of course, social daydreaming may also become dysfunctional if it comes to unduly displace actual social interaction (Somer, 2002), but future studies will need to ascertain for whom social daydreaming is adaptive or maladaptive and under which circumstances. Future research might also explore the feasibility of encouraging certain types of social daydreaming as a means of enhancing well-being and personal relationships.

Daydreaming and thinking about close others have previously been identified as emotional regulation strategies, although not in conjunction. Daydreaming has been reported as a strategy to relieve boredom (e.g. Fisher, 1987; Singer, 1966) and as an emotion-focused coping strategy (Endler & Parker, 1990), and recurrent daydreams have been seen as a source of comfort in times of distress (Greenwald & Harder, 1997). Similarly, thinking about close others is reported as an example of a cognitive emotion regulation strategy (Parkinson & Totterdell, 1999), and imagining close others can regulate negative emotions about an impending stressful event (McGowan, 2002) and alleviate the distress of recalling a distressing memory (Selcuk, Zayas, Günaydin, Hazan, & Kross, 2012). Our results support and extend these findings by providing evidence that daydreaming about close significant others may be an adaptive emotion regulation strategy to alleviate feelings of social disconnection in daily life.

Previous research regarding the link between daydreaming and emotion well-being has associated daydreaming with negative mood and depressive symptomology (e.g. Carriere et al., 2008; Giambra & Traynor, 1978; Smallwood, O'Connor, Sudbery, & Obonsawin, 2007) but other research suggests that this relationship may depend on factors such as the thought content of daydreams and individual differences (e.g. Andrews-Hanna et al., 2013; Poerio et al., 2013; Ruby et al., 2013). The current research indicates that the association can sometimes be positive, depending on whom the daydreamer focuses, how the daydreamer feels at the time, and which emotions are examined.

Although current findings are consistent with the idea that social daydreams function to up-regulate social feelings, our correlational design prevents causal interpretations from being made. We cannot confirm whether feelings of social disconnection caused participants to imagine close others which then caused them to feel happier, more loving and connected with others. If social daydreams were functional for up-regulating feelings, then low levels of happiness, love and connection should predict the occurrence of social, rather than non-social, daydreaming. However, because participants reported on either their last social or last non-social daydream rather than their last daydream of any type, we cannot shed light on this issue. A future study might address this shortcoming by experimentally inducing feelings of social disconnection and examining the social content of daydreaming activity during a subsequent task.

Another limitation is the use of retrospective reports for daydreams, associated feelings before and after daydreaming and measures of emotional content and relationship quality. Participants reported on their most recent social or non-social daydream at four quasi-random intervals within four, three-hour blocks, but were not asked to estimate how long ago their daydream was experienced. The time between experience and recall may have influenced the validity of reports in ways that we cannot control for or explore (Bradburn, Rips, & Shevell, 1987). However, given that daydreaming is thought to occupy between 30% and 50% of waking thought (Killingsworth & Gilbert, 2010; Klinger & Cox, 1987), we suspect that the interval between experience and recall would have been relatively small (i.e. minutes rather than hours) and hence the potential effects on accuracy would also be small.

Another possible consequence of the use of retrospective reports, particularly with reference to feelings before and after daydreaming, is that our results may reflect a demand characteristic or participants' own lay theories concerning how they should have been feeling before and after social and non-social daydreams. Although we cannot rule out these possibilities, we took steps to minimize potential demand characteristics. Pre- and post- daydreaming feeling measures were individually randomized meaning that participants could have completed the questions concerning their feelings on each dimension (happy, calm, excited, loving, connected) referring to before and after their last daydream (i.e. 10 items) in any possible order. In addition, each question (e.g. "How loving were you feeling before your daydream?") was completed on participants' smartphone screens individually such that participants were unable to view their previous responses. If participants reported emotion change to fit with their possible views on the study, then they would have had to remember their responses for each individual measure to use as a reference point for reporting feeling change.

Although we cannot be certain that lay theories about the influence of social and non-social daydreams on social feelings did not influence participant responding in the current study, this issue has been addressed in previous research (Poerio et al., 2013) which found no evidence to suggest that participants believe that daydreaming has either predominately positive or negative effects on mood, or that lay beliefs are consistent enough across participants to systematically bias results. Although this does not specifically shed light on lay theories concerning how social daydreams relate to social feelings, there is no reason at present to suspect that people associate social daydreams in particular with increases in positive feelings.

To address concerns associated with retrospective sampling of daydreaming and affect, a more intensive time-sampling approach could be used in future research where participants report on current daydreaming activity and current affective states at separate time points. However, whether this methodological benefit would outweigh the additional participant burden would need careful consideration (Stone, Kessler, & Haythornthwaite, 1991).

Overall, the present research represents an important first step in establishing and exploring how social daydreams shape and regulate social feelings in daily life. The idea that positive social interactions and interpersonal relationships are vital for well-being is well accepted (Baumeister et al., 2012; Diener & Seligman, 2002; Holt-Lunstad et al., 2010). However, the current findings offer a broader conception of the role that others play in socio-emotional well-being by demonstrating that the influence of others on positive emotion can emerge from the imagination as well as from real events. Our findings indicate that love can really be a triumph of the imagination, albeit not in the sense originally intended in the popular quotation.[3] Although research on daydreaming has experienced a resurgence in recent years (Callard, Smallwood, Golchert, & Margulies, 2013) the field would benefit from examining social aspects of daydreaming to uncover the ways in which people's imaginary, as well as actual, worlds contribute to their socio-emotional functioning.

Conflict of interest

The research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Acknowledgments

This research was supported by the Economic and Social Research Council [grant numbers RES-060-25-0044, ES-J500215-1].

References

Andrews-Hanna, J. R., Kaiser, R. H., Turner, A. E. J., Reineberg, A. E., Godinez, D., Dimidjian, S., et al (2013). A penny for your thoughts: Dimensions of self-generated thought content and relationships with individual differences in emotional wellbeing. *Frontiers in Psychology, 4*(November), 900.

Baird, B., Smallwood, J., & Schooler, J. W. (2011). Back to the future: Autobiographical planning and the functionality of mind-wandering. *Consciousness and Cognition, 20*, 1604–1611.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497–529.

Baumeister, R., Vohs, K., Aaker, J. L., & Garbinsky, E. N. (2012). Some key differences between a happy life and a meaningful life. *SSRN Electronic Journal*, 1–22.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*, 579–616.

Bradburn, N. M., Rips, L. J., & Shevell, S. K. (1987). Answering autobiographical questions: The impact of memory and inference on surveys. *Science, 236*, 157–161.

Callard, F., Smallwood, J., Golchert, J., & Margulies, D. S. (2013). The era of the wandering mind? Twenty-first century research on self-generated mental activity. *Frontiers in Psychology, 4*, 891.

Carriere, J. S. A., Cheyne, J. A., & Smilek, D. (2008). Everyday attention lapses and memory failures: The affective consequences of mindlessness. *Consciousness and Cognition, 17*, 835–847.

Crocker, J., Niiya, Y., & Mischkowski, D. (2008). Why does writing about important values reduce defensiveness? Self-affirmation and the role of positive other-directed feelings. *Psychological Science, 19*, 740–747.

Csikszentmihalyi, M., & Hunter, J. (2003). Happiness in everyday life: The uses of experience sampling. *Journal of Happiness Studies, 4*, 185–199.

Diener, E., & Seligman, M. E. P. (2002). Very Happy People. *Psychological Science, 13*, 81–84.

Elliot, A. J., Sheldon, K. M., & Church, M. A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychology Bulletin, 23*, 915–927.

Endler, N. S., & Parker, J. D. A. (1990). Multidimensional assessment of coping : A critical evaluation. *Personality Processes and Individual Differences, 58*, 844–854.

Fisher, C. D. (1987). *Boredom: Construct, causes and consequences. Technical report ONR-9*. Texas A&M University.

Franklin, M. S., Mrazek, M. D., Anderson, C. L., Smallwood, J., Kingstone, A., & Schooler, J. W. (2013). The silver lining of a mind in the clouds: Interesting musings are associated with positive mood while mind-wandering. *Frontiers in Psychology, 4*, 583.

Giambra, Leonard M., & Traynor, T. D. (1978). Depression and daydreaming: An analysis based on self-ratings. *Journal of Clinical Psychology, 34*, 14–25.

Greenwald, D. F., & Harder, D. W. (1997). Fantasies, coping behavior, and psychopathology. *Journal of Clinical Psychology, 53*, 91–97.

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLOS Medicine, 7*, e1000316.

Hox, J. (2010). *Multilevel analysis: Techniques and applications*. Routledge.

Hutcherson, C., Seppala, E. M., & Gross, J. J. (2008). Loving-kindness meditation increases social connectedness. *Emotion, 8*, 720–724.

Johannessen, K. B., & Berntsen, D. (2010). Current concerns in involuntary and voluntary autobiographical memories. *Consciousness and Cognition, 19*, 847–860.

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science, 306*, 1776–1780.

Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science, 330*, 932.

Klinger, E. (1975). Consequences of commitment to and disengagement from incentives. *Psychological Review, 82*, 1–25.

Klinger, E. (2009). Daydreaming and fantasizing: Thought flow and motivation. In K. D. Markman, W. M. P. Klein, & J. A. Suhr (Eds.), *Handbook of imagination and mental simulation* (pp. 225–239). New York.

Klinger, E. (2013). Goal commitments and the content of thoughts and dreams: Basic principles. *Frontiers in Psychology, 4*, 415.

Klinger, E., & Cox, W. M. (1987). Dimensions of thought flow in everyday life. *Imagination, Cognition and Personality, 7*, 105–128.

Klinger, E. (1996). Emotional influences of cognitive processing, with implications for theories of both. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 168–189). New York: Guilford Press.

Kosslyn, S. M., Ganis, G., & Thompson, W. L. (2001). Neural foundations of imagery. *Nature Reviews. Neuroscience, 2*, 635–642.

[3] "Love is the triumph of the imagination over intelligence" is the original quotation attributed to H.L. Mencken.

Kumashiro, M., & Sedikides, C. (2005). Taking on board liability-focused information: Close positive relationships as a self-bolstering resource. *Psychological Science, 16*, 732–739.
Laurenceau, J.-P., Barrett, L. F., & Rovine, M. J. (2005). The interpersonal process model of intimacy in marriage: A daily-diary and multilevel modeling approach. *Journal of Family Psychology, 19*, 314–323.
Lewis, D. E., O'Reilly, M. J., Khuu, S. K., & Pearson, J. (2013). Conditioning the mind's eye: Associative learning with voluntary mental imagery. *Clinical Psychological Science, 1*, 390–400.
MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods, 7*, 19–40.
Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the "porcupine problem". *Journal of Personality and Social Psychology, 92*, 42–55.
Mar, R. A., Mason, M. F., & Litvack, A. (2012). How daydreaming relates to life satisfaction, loneliness, and social support: The importance of gender and daydream content. *Consciousness and Cognition, 21*, 401–407.
Marchetti, I., Koster, E. H. W., & De Raedt, R. (2012). Mindwandering heightens the accessibility of negative relative to positive thought. *Consciousness and Cognition, 21*, 1517–1525.
Marchetti, I., Van de Putte, E., & Koster, E. H. W. (2014). Self-generated thoughts and depression: From daydreaming to depressive symptoms. *Frontiers in Human Neuroscience, 8*, 131.
Mason, M. F., Brown, K., Mar, R. A., & Smallwood, J. (2013). Driver of discontent or escape vehicle: The affective consequences of mindwandering. *Frontiers in Psychology, 4*, 477.
Mason, M. F., Norton, M. I., Van Horn, J. D., Wegner, D. M., Grafton, S. T., & Macrae, C. N. (2007). Wandering minds: The default network and stimulus-independent thought. *Science, 315*, 393–395.
McGowan, S. (2002). Mental representations in stressful situations: The calming and distressing effects of significant others. *Journal of Experimental Social Psychology, 38*, 152–161.
Miles, E., & Crisp, R. J. (2014). A meta-analytic test of the imagined contact hypothesis. *Group Processes & Intergroup Relations, 17*, 3–26.
Niven, K., Holman, D., & Totterdell, P. (2012). How to win friendship and trust by influencing people's feelings: An investigation of interpersonal affect regulation and the quality of relationships. *Human Relations, 65*, 777–805.
Panagioti, M., Gooding, P. A., & Tarrier, N. (2012). An empirical investigation of the effectiveness of the broad-minded affective coping procedure (BMAC) to boost mood among individuals with posttraumatic stress disorder (PTSD). *Behaviour Research and Therapy, 50*, 589–595.
Parkinson, B., & Totterdell, P. (1999). Classifying affect-regulation strategies. *Cognition & Emotion, 13*, 277–303.
Pickett, C. L., Gardner, W. L., & Knowles, M. (2004). Getting a cue: The need to belong and enhanced sensitivity to social cues. *Personality and Social Psychology Bulletin, 30*, 1095–1107.
Poerio, G. L., Totterdell, P., & Miles, E. (2013). Mind-wandering and negative mood: Does one thing really lead to another? *Consciousness and Cognition, 22*, 1412–1421.
Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin, 26*, 419–435.
Remington, N. A., Fabrigar, L. R., & Visser, P. S. (2000). Reexamining the circumplex model of affect. *Journal of Personality and Social Psychology, 79*, 286–300.
Ruby, F. J. M., Smallwood, J., Engen, H., & Singer, T. (2013). How self-generated thought shapes mood – The relation between mind-wandering and mood depends on the socio-temporal content of thoughts. *PloS One*, 8.
Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.
Schilbach, L., Eickhoff, S. B., Rotarska-Jagiela, A., Fink, G. R., & Vogeley, K. (2008). Minds at rest? Social cognition as the default mode of cognizing and its putative relationship to the "default system" of the brain. *Consciousness and Cognition, 17*, 457–467.
Selcuk, E., Zayas, V., Günaydin, G., Hazan, C., & Kross, E. (2012). Mental representations of attachment figures facilitate recovery following upsetting autobiographical memory recall. *Journal of Personality and Social Psychology, 103*, 362–378.
Singer, J. L. (1966). *Daydreaming: An introduction to the experimental study of inner experience*. New York: Random House Inc..
Smallwood, J., O'Connor, R. C., Sudbery, M. V., & Obonsawin, M. (2007). Mind-wandering and dysphoria. *Cognition & Emotion, 21*, 816–842.
Smallwood, J., & Schooler, J. W. (2006). The restless mind. *Psychological Bulletin, 132*, 946–958.
Somer, E. (2002). Maladaptive daydreaming: A qualitative inquiry. *Journal of Contemporary Psychotherapy, 32*, 197–212.
Song, X., & Wang, X. (2012). Mind wandering in Chinese daily lives – An experience sampling study. *PloS One, 7*, e44423.
Stawarczyk, D., Majerus, S., Maj, M., Van der Linden, M., & D'Argembeau, A. (2011). Mind-wandering: Phenomenology and function as assessed with a novel experience sampling method. *Acta Psychologica, 136*, 370–381.
Stone, A. A., Kessler, R. C., & Haythornthwaite, J. A. (1991). Measuring daily events and experiences: Decisions for the researcher. *Journal of Personality, 59*, 575–607.
Tamir, M., & Diener, E. (2008). Approach-avoidance goals and well-being: One size does not fit all. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp. 415–430). Mahwah, NJ: Erlbaum.
Watt, S. E., & Badger, A. J. (2009). Effects of social belonging on homesickness: An application of the belongingness hypothesis. *Personality and Social Psychology Bulletin, 35*, 516–530.
Westermann, R., & Spies, K. (1996). Relative effectiveness and validity of mood induction procedures: A meta-analysis. *European Journal of Social Psychology, 26*, 557–580.
Wheeler, L., & Reis, H. T. (1991). Self-recording of everyday life events: Origins, types, and uses. *Journal of Personality, 59*, 339–354.