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Brief Report

Daily mental lapses and the subjective experience of true self-alienation

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ABSTRACT

The current research drew upon cross-sectional evidence that feelings of being disconnected from one's "true" self (true self-alienation) covary with tendencies to become mentally detached from present environmental stimuli (mind wandering). Two longitudinal studies tested the prospective associations between true self-alienation and mind wandering. Study 1 found evidence for a positive association between true self-alienation and mind wandering at the trait level only. Study 2, which employed a more optimal design, revealed reciprocal positive prospective associations between with-in person fluctuations in "true" self-alienation and mind wandering. Our results provide new evidence for the association between true self-alienation and mind wandering and suggest that basic aspects of conscious experience are prospectively linked to feelings of self-alienation.

0. Introduction

While research indicates that people may be incapable of objectively knowing their inner selves (Nisbett & Wilson, 1977), authenticity research suggests that people do subjectively experience feelings of knowing themselves and that these feelings have consequences. Indeed, the feeling of knowing and being connected to who one believes they truly are contributes to aspects of flourishing, including meaning in life (Schlegel, Hicks, King, & Arndt, 2011), academic motivation (Kim, Christy, Schlegel, Donnellen, & Hicks, in press), and psychological health (Wood, Linley, Maltby, Baliousis, & Joseph, 2008). At the same time, elucidation of the cognitive processes linked to these feelings is far from developed. Wood et al. (2008) suggest that feelings of true self-alienation occur when people's conscious awareness becomes detached from their actual inner beliefs, emotions, and/or physiological states. An implication of this conceptualization is that people may have a subjective feeling of being disconnected from their "true" self when the contents of conscious awareness become detached from the sensory inputs in the present external environment.

Mind wandering reflects a decoupling of conscious awareness from the present environment (Smallwood & Schooler, 2015) and, to the extent that such events reflect a disconnect between actual experiences and conscious awareness, may covary with the subjective experience of being disconnected from one's true self. Williams and Vess (2016) offered initial support for this prediction by showing that the self-reported tendency to experience poor control over inner experiences positively correlated with feelings of true self-alienation. Subsequent research (Vess, Leal, Hoeldtke, Schlegel, & Hicks, 2016) tested the association between true self-alienation and mind wandering using well-validated paradigms for capturing mental disengagement from focal tasks. Participants in these studies responded to randomly presented thought probes during minimally demanding tasks and indicated whether their current thoughts were focused on the task or something unrelated. The results revealed a reliable positive association between individual differences in true self-alienation and reports of mind wandering. Critically, this association remained significant even after statistically accounting for the independent influence of other potential explanatory third variables (e.g., negative affect, self-esteem, neuroticism).

These earlier findings offer what may be the most direct support for the conceptualization of true self-alienation as an experienced disconnect between conscious awareness and stimuli in one's focal environment. However, they are limited by their cross-sectional design, raising an important question about how these processes relate both within- and between-persons, as well as across time. The goal of the present research was to address this limitation and provide a critical extension of research on true self-alienation and patterns of inner mental life.

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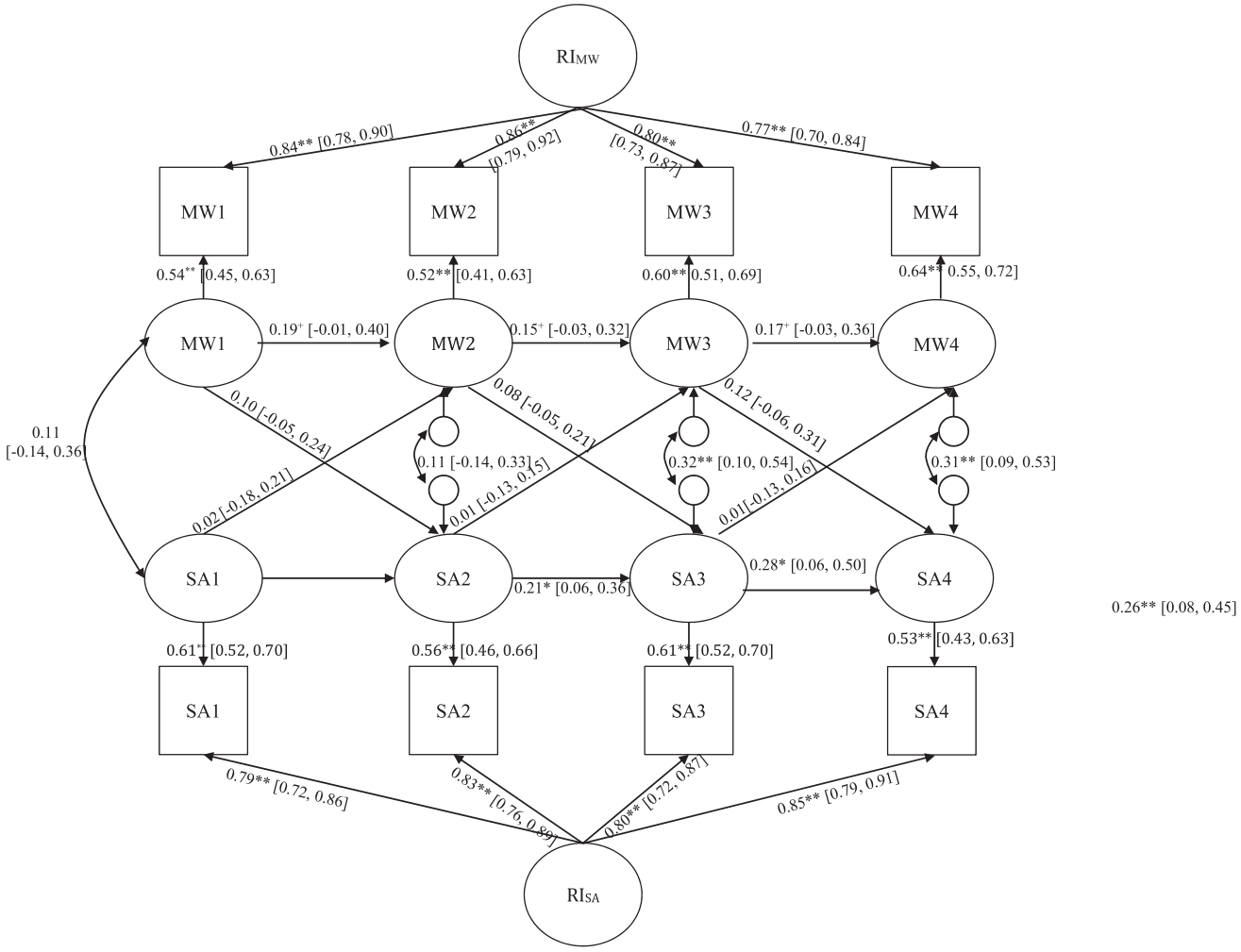

Fig. 1. Random intercept cross-lagged panel model of the reciprocal relationship between self-alienation (SA) and mindwandering (MW) across four waves, with 3–4 week time lags. Squares represent observed variables and circles denote latent variables (RI represents random intercepts). Numbers attached to arrows between the same latent variables indicate standardized autoregressive estimates; numbers attached to arrows between different latent variables indicate standardized cross-lagged estimates; numbers given in brackets indicate 95% CI. The subscript numbers attached to MW and SA indicate wave numbers. rRI_{MW}, $RI_{SA} = 0.37^{**}$ [0.19, 0.52], $^{+}p < .10$. $^{*}p < 0.01$. $^{**}p < 0.001$.

1. Study 1[1]

We utilized cross-lagged panel designs to test longitudinal associations between self-reported experiences of mind wandering and feelings of true self-alienation over the course of people's daily affairs. Study 1 made use of data collected as part of an unrelated project (Kim et al., 2018).[2] Although this project was not specifically designed to address our primary question, it provided an opportunity to do so.

2. Methods

2.1. Participants

The sample for this four-part study comprised introductory psychology students. One hundred and twelve participants (78.8%) completed all four surveys, 19 participants (13.4%) completed 3 surveys, 7 participants (4.9%) completed 2 surveys, and 4 participants (2.8%) completed only 1 survey. The 4 participants who completed only one wave of the study were excluded from analyses. Thus, our final sample consisted of 138 participants (123 females, 45 males, 1 unreported) who ranged in age from 18 to 53 years old ($M = 20.03$, $SD = 4.47$). Given the relative newness of our analytic approach, we didn't have formal procedures for calculating a desired sample size. Our goal was to enroll as many participants as possible given available time and resources. We do note that Vess et al. (2016) reported correlations between true self-alienation and mind wandering that ranged from $r = 0.27$ to $r = 0.29$; our sample size would be adequate to detect correlations of that size at power = 0.80. However, the sample size is likely underpowered to detect a more conservative estimate of $r = 0.20$ for the cross-lagged associations.

2.2. Procedure

The first wave of the study was completed in a laboratory early in the academic semester. There were 3–4 week time lags between each wave of the study (the exact timing varied somewhat due to events in the semester such as the Thanksgiving holiday).

[1] Study 1 and Study 2 were not pre-registered. All data and materials are available on the Open Science Framework: https://osf.io/htg7z/?view_only=caf32ce1fdcc495db3770811c43dbc5b

[2] The data presented in the current paper are a subset of data reported by Kim et al. (in press). Kim et al. combined data from the current study with an additional data set to test their hypotheses about academic amotivation. The data that we report here do not include that additional data set because mind wandering was not assessed.

Participants received e-mails with links to each follow-up survey and completed those surveys on-line outside of the laboratory.

2.3. Materials

Each of the four surveys included a number of measures, including measures of true self-alienation and mind wandering.

2.3.1. True self-alienation

We assessed feelings of true self-alienation via two established measures: the True Self-Alienation subscale of the Wood et al. (2008) measure of authenticity and the True Self-Awareness subscale (reverse scored) of the Kernis and Goldman (2006) measure of authenticity. As in previous research (Christy, Seto, Schlegel, Vess, & Hicks, 2016), scores on all 16 items were averaged into a single measure of true self-alienation (Wave 1: $M = 3.09$, $SD = 0.94$, $\alpha = 0.87$; Wave 2: $M = 3.10$, $SD = 0.92$, $\alpha = 0.89$; Wave 3 $M = 3.10$, $SD = 0.62$, $\alpha = 0.88$; Wave 4, $M = 3.09$, $SD = 0.96$, $\alpha = 0.90$). Participants responded to each item on 1 *(strongly disagree/does not describe me at all*) to 7 (*strongly agree/Describes me very well*) scales based on how they generally feel.[3]

2.3.2. Mind wandering

We also assessed tendencies to mind wander via two established measures: the Attention Related Cognitive Errors Scale (Cheyne, Carriere, & Smilek, 2006) and the revised Mindful Attention Awareness Scale (Brown & Ryan, 2003)[4] utilized in previous research on mind wandering and attention lapses (Cheyne, Carriere, & Smilek, 2006). We averaged these 24 items into a single mind wandering composite (Wave 1: $M = 3.32$, $SD = 0.70$, $\alpha = 0.90$; Wave 2: $M = 3.36$, $SD = 0.72$, $\alpha = 0.92$; Wave 3: $M = 3.36$, $SD = 0.78$, $\alpha = 0.93$; Wave 4: $M = 3.21$, $SD = 0.84$, $\alpha = 0.95$). Participants were instructed to respond based on their experiences during the *last week*.

3. Results

Conceptually replicating earlier work (Vess et al., 2016), we found significant positive bivariate cross-sectional correlations between true self-alienation and mind wandering at each time point (*r*s range = 0.27–0.36). We used a random-intercepts cross-lagged panel model (Hamaker, Kuiper, & Grasman, 2015) to examine longitudinal associations between self-alienation and mind wandering. This approach allowed for the simultaneous analysis of (a) between-person, trait-level, time invariant propensities for self-alienation and mind wandering and (b) within-person temporal variation in each construct. It has been proposed that this approach protects against biased parameter estimates for significant within-person variation that is, in fact, due to between-person effects (Hamaker et al., 2015).

Our models included assessments of self-alienation and mind wandering at four measurement occasions. We partitioned the variance of these measures into latent random intercepts, reflecting between-person, trait-level, time invariant differences and latent factors reflecting within person variability at each measurement occasion. We included autoregressive paths for the within-person factors, reflecting the persistence of variation in each assessment across time. Cross-lagged paths for within-person factors allowed cross-construct prediction at subsequent measurement occasions (e.g., self-alienation at time 1 prospectively predicting mind wandering at time 2).

All models were tested in Mplus 7 (version 1.4.1; Muthén & Muthén, 1998–2012) with factor loadings for observed variables and random intercepts fixed to 1.00. Similar to previous work (Kim et al., 2018), we imposed equality constraints on autoregressive and cross-lagged paths reflecting the same prediction over time (e.g., stability in self-alienation across waves, predicting mind wandering from self-alienation across waves, etc.).

The overall fit for the random-intercepts cross-lagged panel model in Study 1 was judged to be acceptable (RMSEA = 0.09, $\chi^2(5) = 36.14$, $p = 0.004$, CFI = 0.97). As shown in Fig. 1, measures appeared to capture mostly stable trait-like propensities for mind wandering and self-alienation. There were no longitudinal effects of within-person fluctuations in self-alienation on mind wandering or of mind wandering on self-alienation. However, a significant positive association between the trait-like latent factors did emerge.

4. Discussion

Study 1 yielded data that conceptually replicated earlier findings. True self-alienation and reports of mind wandering were positively associated at the bivariate level at each assessment phase and at the between-person trait-level latent factors of our full panel model. Evidence for prospective relationships, however, did not emerge. Our methods may have contributed to this. First, instructions for the true self-alienation assessments were framed in a way that may have emphasized trait-like dispositions (i.e., they asked about people's general feelings) making them less sensitive to temporal fluctuations. Second, the multi-week interval between assessment phases may have been too long to capture within-person prospective relationships between these variables. It might be an especially tall order to expect within-person fluctuations in daily reports of mind wandering to predict within-person fluctuations in true self-alienation three to four weeks after the mind wandering reports were made (or vice-versa), particularly after accounting for stable trait-like variance. To address these potential problems, Study 2 modified the wording presented to participants to better capture states within the "last 24 h" and assessed each variable over much shorter time intervals.

5. Study 2

5.1. Methods

5.1.1. Participants

Introductory psychology students participated in Study 2. One-hundred nine participants (58.3%) completed all three surveys, 60 participants (32.1%) completed 2/3 surveys, and 18 participants (9.6%) completed only 1 survey. Only participants who completed at least 2 of three surveys were included in analyses. Our final sample consisted of 169 participants (123 females, 44 males, 2 unreported) who ranged in age from 18 to 53 ($M = 19.99$, $SD = 4.46$). We attempted to recruit as large a sample as possible given available time and resources. Our aim was to enroll at least 200 participants, which we nearly met ($N = 187$). Attrition, however, led to a final sample under what would be needed to detect a correlation of $r = 0.20$ ($N = 193$) at power = 0.80 when conducting a two-tailed test. The sample exceeded what would be needed for a one-tailed test at power = 0.80 ($N = 153$).

5.1.2. Procedure

Enrolled participants received an email stating that researchers would send them a survey link on Monday, Wednesday, and Friday of the following week. The survey links were sent via email in the

[3] To not assess weekly or current perceptions of self-alienation was problematic for our aims.

[4] Cheyne, Carriere, & Smilek, 2006 excluded two original items from this scale because they captured "performance errors" more than lapses in conscious awareness. In both of our studies, a programming error caused one additional item from the original scale to be omitted. The scale utilized in our studies is available at the OSF link.

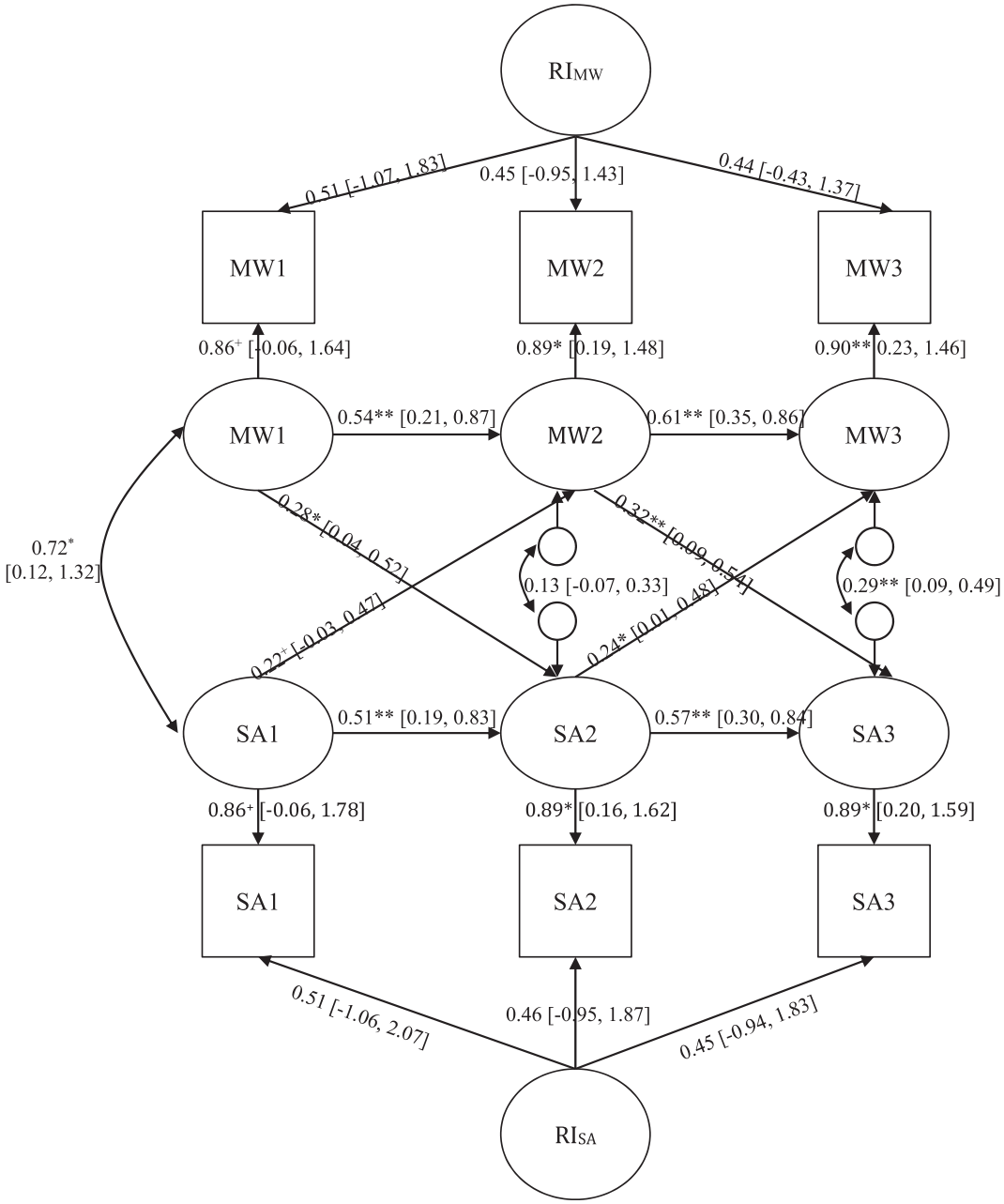

Fig. 2. Random intercept cross-lagged panel model of the reciprocal relationship between self-alienation (SA) and mindwandering (MW) across three waves, with 2-day time lags in Study 2. Squares represent observed variables and circles denote latent variables (RI represents random intercepts). Numbers attached to arrows between the same latent variables indicate standardized autoregressive estimates; numbers attached to arrows between different latent variables indicate standardized cross-lagged estimates; numbers given in brackets indicate 95% CI. The subscript numbers attached to MW and SA indicate wave numbers. rRI_{MW}, $RI_{SA} = -0.41$ [−8.95, 8.14], $^{+}p < 0.10$. $^{*}p < 0.01$. $^{**}p < 0.001$.

afternoons and participants were instructed to complete each survey between 5:00 PM and 10:00 PM on the day it was sent. The surveys could not be accessed outside of those specified times. All measures were presented in random order.

5.2. Materials[5]

5.2.1. True self-alienation

We assessed true self-alienation with the same measures used in Study 1, but participants were asked to respond based on how they felt over the *last 24 h* (Day 1: $M = 2.94$, $SD = 0.95$, $\alpha = 0.88$; Day 2: $M = 2.99$, $SD = 1.07$, $\alpha = 0.92$; Day 3, $M = 2.95$, $SD = 1.05$, $\alpha = 0.91$).

5.2.2. Mind wandering

We also assessed mind wandering with the same measures used in Study 1, but participants were asked to respond based on how they felt over the *last 24 h* (Day 1: $M = 3.65$, $SD = 1.11$, $\alpha = 0.93$; Day 2: $M = 3.43$, $SD = 1.18$, $\alpha = 0.95$; Day 3, $M = 3.20$, $SD = 1.31$, $\alpha = 0.96$).

6. Results

Analytic procedures were identical to Study 1, but included only 3 assessments. We conceptually replicated earlier work at the

[5] In addition to the critical measures described in the methods, participants also completed other measures unrelated to the hypotheses that we tested in this paper. All materials and data can be found at our OSF link.

bivariate cross-sectional level of analysis. True self-alienation and mind wandering were significantly positively associated at each time point (*r*s range = 0.46–0.53). More importantly, the overall fit for the random-intercepts cross-lagged panel model was judged to be acceptable (RMSEA = 0.07, $\chi^2(5) = 9.13$, $p = 0.10$, CFI = 0.99). As shown in Fig. 2, within-person fluctuations, visible through the autoregressive pathways, suggested stable deviations in self-alienation and mind wandering across assessments. There were also significant within-person cross-lagged effects of self-alienation on mind wandering and of mind wandering on self-alienation. Effects were positive in both cases, suggesting that greater self-alienation predicted greater mind wandering at subsequent occasions and that greater mind wandering predicted greater self-alienation at subsequent occasions. In contrast to Study 1, the between person trait-level latent factors in our panel model were not significantly associated, which likely reflects the less "trait-like" instructions of our measures.

7. Discussion

As in previous studies, Study 2 revealed consistent positive bivariate cross-sectional associations between mind wandering and true self-alienation. The key finding, however, provided evidence for a reciprocal pattern of longitudinal within-person associations between true self-alienation and mind wandering. Within-person deviations in mind wandering positively and prospectively predicted within-person deviations in true self-alienation and vice-versa.

8. General discussion

This research is the first to report prospective associations between within-person fluctuations in mind wandering and the experience of being disconnected from one's "true" self. These prospective relationships followed a reciprocal pattern, such that mind wandering and true self-alienation prospectively predicted each other. These associations only occurred in Study 2, which specifically assessed daily reports (vs. general tendencies) and included shorter lags between assessments (48 h in Study 2 vs. 3–4 weeks in Study 1). In Study 1, a significant positive association between mind wandering and true self-alienation was observed at the between-person trait-like level. This might suggest that associations between mind wandering and true self-alienation occur at both the between (trait-like) and within-person levels, but that longitudinal associations between within-person fluctuations may be limited to shorter time intervals and may be best captured by measures that assess feelings for specific points in time, rather than general tendencies. Of course, specification of how and why interval assessment length influences these prospective relationships remains a question for future inquiry. Likewise, research that uses other operationalizations of mind wandering in daily life (e.g., random thought probes; Kane et al., 2007) could be helpful in more fully delineating within-person associations between mind wandering and experiences of true self-alienation.

Future research will also need to address some of the important limitations of this work. For example, our samples only included college aged adults in the United States. We do not see any theoretical reason why these associations might differ in other populations, but it remains an open empirical question. Perhaps more substantively, the current studies are silent in regards to the types of mind wandering experiences that most strongly covary with feelings of true self-alienation. Intentionality might be important (Seli, Risko, & Smilek, 2016), as our studies likely capture unintentional mind wandering and we suspect that feelings of true self-alienation would be unlikely to covary with inner directed thoughts that are intentional. The valence and temporal orientation of the mind wandering content may also be relevant, given evidence that positive-constructive daydreaming is negatively associated with self-alienation (Williams & Vess, 2016), and arguments for the functional advantages of future-oriented positive mind wandering (Smallwood & Andrews-Hanna, 2013).

Finally, while our studies advance what is known about the association between mind wandering and true self-alienation, they do not provide direct evidence for a causal process. It is possible, for instance, that some unmeasured common causal variable accounts for the prospective associations observed in Study 2. Previous cross-sectional work can partially address such a concern, as Vess et al. (2016) reported that associations between true self-alienation and thought probe measures of mindwandering emerged above and beyond the influence of many other relevant variables (e.g., self-esteem, negative affect). Nevertheless, the data available at this point in time do not warrant a strong causal interpretation. Experimental work will be needed to address that important issue and further inform the nature and robustness of these effects. Those limitations aside, the current findings address the key limitations of earlier cross-sectional research and advance empirical understanding of the intrapsychic processes tethered to the feeling of being disconnected from one's true self.

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