Modus operandi and affect in Sweden: The Swedish version of the Regulatory Mode Questionnaire

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Background: The Regulatory Mode Questionnaire (RMQ) is the most used and international well-known instrument for the measurement of individual differences in the two self-regulatory modes: locomotion (i.e., the aspect of self-regulation that is concerned with movement from state to state) and assessment (i.e., the comparative aspect of self-regulation). The aim of the present study was to verify the independence of the two regulatory modes, as postulated by the Regulatory Mode Theory (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000), and the psychometric properties of the RMQ in the Swedish context. Furthermore, we investigated the relationship between regulatory modes (locomotion and assessment) and affective well-being (i.e., positive affect and negative affect).

Method: A total of 655 university and high school students in the West of Sweden (males = 408 females = 242, and 5 participants who didn’t report their gender; age mean = 21.93±6.51) responded to the RMQ and the Positive Affect Negative Affect Schedule. We conducted two confirmatory factor analyses using structural equation modeling (SEM). A third SEM was conducted to test the relationship between locomotion and assessment to positive affect and negative affect.

Results: The first analyses confirmed the unidimensional factor structure of locomotion and assessment and both scales showed good reliability. The assessment scale, however, was modified by dropping item 10 (“I don’t spend much time thinking about ways others could improve themselves.”) because it showed low loading (.07, p = .115). Furthermore, the effect of locomotion on positive affect was stronger than the effect of assessment on positive affect (Z = -15.16, p < .001), while the effect of assessment on negative affect was stronger than the effect of locomotion on negative affect (Z = 10.73, p < .001).

Conclusion: The factor structure of the Swedish version of the RMQ is, as Regulatory Mode Theory suggests, unidimensional and it showed good reliability. The scales discriminated between the two affective well-being dimensions. We suggest that the Swedish version of the RMQ, with only minor modifications, is a useful instrument to tap individual differences in locomotion and assessment. Hence, the present study contributes to the validation of the RMQ in the Swedish culture and adds support to the theoretical framework of self-regulatory mode.
Modus Operandi and Affect in Sweden:

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Abstract

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**Results:** The first analyses confirmed the unidimensional factor structure of locomotion and assessment and both scales showed good reliability. The assessment scale, however, was modified by dropping item 10 (“I don’t spend much time thinking about ways others could improve themselves.”) because it showed low loading (.07, \( p = .115 \)). Furthermore, the effect of locomotion on positive affect was stronger than the effect of assessment on positive affect (\( Z = -15.16, \ p < .001 \)), while the effect of assessment on negative affect was stronger than the effect of locomotion on negative affect (\( Z = 10.73, \ p < .001 \)).

**Conclusion:** The factor structure of the Swedish version of the RMQ is, as Regulatory Mode Theory suggests, unidimensional and it showed good reliability. The scales discriminated between the two affective well-being dimensions. We suggest that the Swedish version of the RMQ, with only minor modifications, is a useful instrument to tap individual differences in locomotion and assessment. Hence, the present study contributes to the validation of the RMQ in
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Introduction

The Regulatory Mode Questionnaire (RMQ; Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000) measures individual differences in the way people prefer to operate when striving to reach a goal. Specifically, the RMQ measures how individuals differ in their tendency to move from state to state towards a goal (locomotion) and in their tendency to compare different alternatives, such as, the value of different goals or the different means to reach a chosen goal (assessment). Structurally, the RMQ is constituted by two scales that tap individual differences in locomotion and assessment\(^1\). So far, the RMQ has been translated into several languages (e.g., French, Italian, Spanish, Japanese, Hebrew, Hindu, and Korean), including Swedish (see Table 1; Jimmefors, Garcia, Rosenberg, Mousavi, Adrianson & Archer, 2014; Garcia, Jimmefors, Mousavi, Adrianson, Rosenberg & Archer, 2015; Garcia & Archer, 2016; Garcia & Lindskär, 2016; Garcia, Roseneberg, Lindskär, Amato & Nima, 2017). A few studies, have demonstrated the unidimensionality, the internal consistency, and the temporal stability as well as the convergent and discriminant validity of each of the two scales in the RMQ (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah, & Spiegel, 2000). However, with exception of the Italian and the original English version, the structure and psychometric properties of these versions of the RMQ have not yet been investigated. In the present study, we test the unidimensionality and reliability of the Swedish version of the RMQ scales (locomotion

\(^1\)Although the RMQ also contains a lie scale, consisting of 6 items (see white cells in Table 1), this scale is often not used in most research and some studies have also applied only one of the scales (e.g., locomotion; Pierro, Giacomantonio, Pica, Kruglanski & Higgins, 2013).
and assessment). Furthermore, we also investigate the relationship between regulatory modes and affective well-being (i.e., positive affect and negative affect) in the Swedish sample at hand. Importantly, positive affect and negative affect are not only indicators or markers of well-being (Diener, 1984), these two affectivity dimensions are two distinctive factors that reflect stable emotional-temperamental dispositions and form together an adaptive complex signal sensitivity system (e.g., Watson & Clark, 1994; Watson, Clark, & Tellegen; 1988; Tellegen, 1993; Garcia, 2011, 2017a). In the following sections, we will introduce Regulatory Mode Theory (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000), we will provide an overview of the wide range of use of the RMQ, and we will develop the expected associations between the regulatory modes (locomotion and assessment) and the affective well-being dimensions (i.e., positive and negative affect).

Table 1 should be here

**Regulatory Mode Theory: Locomotion and Assessment Orientations**

In the classic theory of control (Carver & Scheier, 1990), assessment and locomotion are functionally interdependent parts of a single self-regulatory process. In the first step, through the assessment function, an individual compares the different mental goal representations and chooses the favorite one, then he/she compares the current state with the desired end-state. In the second step, through the locomotion function, the individual tries to reduce the current-end states discrepancy by starting and maintaining movement toward the target goal. Conversely, in the frame of Regulatory Mode Theory (Higgins, Kruglanski & Pierro, 2003), locomotion and assessment are independent functions, which can receive different emphasis. In this context, locomotion is the aspect of self-regulation concerned with "movement from state to state and with committing the psychological resources that will initiate and maintain goal-related
movement in a straightforward and direct manner, without undue distractions or delays” (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000, p. 794) and assessment is “the comparative aspect of self-regulation concerned with critically evaluating entities or states, such as goals or means, in relation to alternatives in order to judge relative quality” (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000, p. 794).

There are two important assumptions in Regulatory Mode Theory: 1) temperament and socialization lead individuals to develop different degrees of concern with movement or progress (i.e., emphasizing locomotion) and different degrees of concern for standards and for critically evaluating alternatives (i.e., emphasizing assessment) and 2) the reasons for preferring locomotion or assessment are unrelated (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000). In other words, locomotion and assessment are independent and orthogonal biopsychosocial modes of operation, thus, some individuals can be high on one mode and low on the other mode, low on both modes, or high on both modes (cf. Garcia & Lindskär, 2016). The RMQ is indeed an instrument that helps to measure the chronic preference for one regulatory mode orientation over the other.

Applications of the RMQ

Previous studies have shown the high practical relevance and the wide potential applicability of the RMQ. Since its development, several studies have shown that the two regulatory modes are related with many important aspects, ranging from organizational behavior (e.g., preference for leadership style; Benjamin & Flynn, 2006; time management; Amato, Pierro, Chirumbolo & Pica, 2014), to entrepreneurial aptitude (Amato, Baron, Barbieri, Bélanger & Pierro, 2017), to cognition (e.g., cognitive biases, counterfactual thinking; Pierro, Leder, Mannetti, Higgins, Kruglanski, & Aiello, 2008), and economic decision-making (e.g., inter-temporal choices;
Mannetti, Leder, Insalata, Pierro, Higgins, & Kruglanski, 2009). Particularly relevant to the present study, is the strong link between self-regulation and both health and well-being. Specifically, there is evidence that a prevalence of locomotion orientation is positively related to affective well-being (i.e., frequent experience of positive affect and infrequent experience of negative affect), while a prevalence of assessment orientation is associated with maladaptive psychological functioning and even psychopathological symptoms (Garcia, Nima, Lindskär, Jimefors, Archer, & MacDonald, 2016). For instance, locomotion is both indirectly and directly positively related to affective well-being. For example, people who are high in locomotion do not engage in social comparison and have therefore a tendency to be less materialistic, which in turn leads them to experience less negative affect (Giacomantonio, Mannetti, & Pierro, 2013). Indeed, engaging in social comparison and self-evaluation, something a person does when in assessment mode, leads to materialistic thinking, which in turn leads to high levels of negative affect (Giacomantonio, Mannetti, Pierro, 2013). That being said, affective well-being is more that the absence of negative emotions (cf. Cloninger, 2004). In this context, people who are high in locomotion report having a sense of life purpose and this lead them to be more satisfied with their life (Vazeou-Nieuwenhuis, Orehek, & Scheier, 2017). In addition, locomotion is directly related to higher levels of vitality (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000), higher levels of optimism (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000), happiness (Smith, Haynes, Lazarus & Pope, 1993) and last but not the least, positive affect (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah, & Spiegel, 2000; Garcia, Jimmefors, Mousavi, Adrianson, Rosenberg, & Archer, 2015; Garcia, Nima, Lindskär, Jimmefors, Archer, & MacDonald, 2016). Individuals with a high assessment orientation, on the other hand, are more likely to present depressive symptoms (Hong, Tan & Chang, 2004), they are also more
susceptible to suffer from borderline disorder (Bornovalova, Fishman, Strong, Kruglanski & Lejuez, 2008) and obsessive-compulsive disorder (Shalev & Sulikowski, 2009), and report high levels of negative affect (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000; Garcia, Jimmefors, Mousavi, Adrianson, Rosenberg & Archer, 2015; Garcia, Nima, Lindskär, Jimmefors, Archer & MacDonald, 2016).

The Present Study

In the present study, based on Regulatory Mode Theory we test the unidimensionality of the Swedish version of the RMQ scales (locomotion and assessment). We also test the reliability of the Swedish RMQ and the predictive validity of the regulatory mode scales by investigating the relationship between regulatory modes (locomotion and assessment) and affective well-being (positive and negative affect). The affectivity dimensions were found appropriate, to test the RMQ scales’ predictive validity, for different reasons.

First of all, the affectivity dimension range from pleasant/unpleasant engagement (for example: enthusiastic and active for positive affect, anger and fear for negative affect), to unpleasant/pleasant disengagement (for example: sad and bored for positive affect, calm and serene for negative affect) (Watson, Clark & Tellegen, 1988; Watson & Clark, 1994). Thus, as locomotion and assessment (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000), positive affect and negative affect are best conceptualized as two independent orthogonal dimensions that are part of a complex adaptive system and not as ends of one single dimension (Garcia, 2011, 2017a). These two affectivity dimensions reflect approaching behavior (positive affect) and avoidant behavior (negative affect) (Garcia, 2011, 2017a). Thus, we expected locomotion to predict positive affect or approaching behavior and assessment to predict negative affect or avoidant behavior (cf. with Kruglanski, Thompson, Higgins, Atash, Pierro, Shah &
Spiegel, 2000, who also suggested a positive correlation between locomotion and positive affect because locomotion or forward movement contributes to a sense of progress and a positive correlation between assessment and negative affect because high assessment involves ruminating self-evaluation that may highlight the discrepancies between one's actual self and a desired self).

Secondly, according to Regulatory Mode theory, temperament and socialization lead individuals to develop different degrees of locomotion and assessment. Indeed, Kruglanski and colleagues (2000) found a positive correlation between locomotion and extraversion \((r = .38; p < .001)\), a negative correlation between locomotion and neuroticism \((r = -.20; p < .001)\), a positive correlation between assessment and neuroticism \((r = .41; p < .001)\), and a negative correlation between assessment and extraversion \((r = -.03; nonsignificant)\). Notably, positive and negative affect are almost identical with these personality traits (i.e., extraversion and neuroticism, respectively) (Larsen & Ketelaar, 1991; see also Garcia, Adrianson, Archer & Rosenberg, 2015; Garcia, Ghiabi, Rosenberg, Nima & Archer, 2015; Rapp Ricciardi, Åkerman, Eerikäinen, Ambjörnsson, Andersson Arntén, Archer & Garcia, 2014; Garcia & Moradi, 2013; Garcia, 2012; Garcia, Rosenberg, Erlandsson & Siddiqui, 2010). In addition, compared to extraversion and neuroticism, the two affectivity dimensions involve more mood and social traits (Gunderson, Triebwasser, Phillips, & Sullivan, 1999). Therefore, these affectivity dimension are not only seen as temperamental dispositions or signal sensitivity systems, but also as being complementary to extraversion and neuroticism (Tellegen, 1993). We argue that this supports our expectation of a positive relationship between locomotion and positive affect and between assessment and negative affect. In addition, this suggests a negative or non-significant relationship between locomotion and negative affect and between assessment and positive affect. Hence, we expected a stronger relationship between locomotion and positive affect than between assessment and
positive affect. Conversely, we expected a stronger relationship between assessment and negative affect than between locomotion and negative affect.

Materials and Methods

Ethical statement

After consulting with the Network for Empowerment and Well-Being’s Review Board we arrived at the conclusion that the design of the present study (e.g., all participants’ data were anonymous and will not be used for commercial or other non-scientific purposes) required only informed consent from the participants.

Participants and procedure

A total of 655 students (357 university students and 298 high school students) in the West of Sweden (males = 408 females = 242, and 5 participants who didn’t report their gender, age\text{mean} = 21.93±6.51) participated in the study. All participants were informed that taking part of the study was voluntary and anonymous. They were presented with paper-pencil Swedish versions of the RMQ and the Positive Affect Negative Affect Schedule.

Measures

Self-regulation. The Swedish version (Garcia, Jimmefors, Mousavi, Adrianson, Rosenberg, & Archer, 2015; Garcia, Rosenberg, Lindskär, Amato, & Nima, 2017) of the RMQ (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah, & Spiegel, 2000) was used to assess self-regulatory mode/orientations. The test consists of 30 items measured on a 6 point likert scale (from 1 = strongly disagree to 6 = strongly agree); 12 items measuring assessment (e.g., “I spend a great deal of time taking inventory of my positive and negative characteristics”, “I am a critical person”), 12 items measuring locomotion (“I am a doer”, “When I get started on something, I usually persevere until I finish it”), and six constituting a lie scale that was not analyzed in the
present study (see Table 1).

Affect. The Positive Affect and Negative Affect Schedule (Watson, Clark & Tellegen, 1988) assesses the affective component of subjective well-being by requiring participants to rate to what extent (1 = very slightly, 5 = extremely) during the last few weeks they have experienced 10 positive (e.g., strong, proud) and interested and 10 negative (e.g., afraid, ashamed, and nervous) affective states. The Swedish version has been used in previous studies with good psychometric properties (e.g., Schütz, Archer & Garcia, 2013).

Preliminary descriptive analyses

We conducted Preliminary analyses to test some statistical issues, such as the presence of outliers and collinearity between variables. We first standardized the scores of each variable and tested if any cases had larger standardized scores than ±3.29, as recommended by Tabachnick and Fidell (2007). The analysis detected no cases of univariate outliers. The variables had skewness between -.10 to .64 and kurtosis between .70 and .12, thus, indicating that the data did not violate the assumption of normality (see, Barker, 2007, p. 341; Tabachnick & Fidell, 2007, p.80). Moreover, we examined the distributions of the items and linearity by scatter plots. The results showed the absence of any signs of violation of normality and linearity assumptions. Finally, all the significant correlations among the variables were not so high as to threaten statistical multicollinearity and singularity. Indeed, the correlation coefficients range between .08 to .53, thus not constituting a cause for multicollianarity and singularity issues (see, Tabachnick & Fidell, 2007, p.88). Table 2 show the correlations between variables in the present study, along Cronbach’s alphas and both means and standard deviations for each variable.

Table 2 should be here

Results
Based on Regulatory Mode Theory we first tested the unidimensionality of the Swedish version of the RMQ scales (locomotion and assessment) using two separate confirmatory factor analyses through structural equation modeling (SEM), one for locomotion and one for assessment. We used separate analyses since locomotion and assessment are two independent unrelated modes of operation (e.g., Kruglanski, Thompson, Higgins, Atash, Pierro, Shah, & Spiegel, 2000).

**Locomotion**

The first confirmatory analysis was conducted using the 12 items to estimate locomotion as one factor. The analysis showed that chi-square value was significant ($\chi^2 = 268.79, df = 54, p < .001$), the goodness of fit index was .93 and the root mean square error of approximation for the default model was .08. The chi-square statistic is heavily influenced by sample size (Kline, 2010), with larger samples (in this study $N = 650$) leading to larger value and therefore, a larger likelihood of being significant. However, other values (the goodness of fit index and the root mean square error of approximation) indicated that the hypothesized model fits the data well. All the regression weights/loadings between the factor (i.e., locomotion) and its 12 items were significant at $p < .001$ (ranging from .32 to .72) with the exception of two items that had low loadings (.29 for the reversed item 13: “When I finish one project, I often wait awhile before getting started on a new one.” and .15 for item 16: “When I decide to do something, I can’t wait to get started.”) which were also significant at $p < .001$ (see Figure 1 and Table 3). Nevertheless, the results mirror those in the original article (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000) in which the fit of the one-factor model for both the locomotion and assessment scales were higher than .90 for goodness of fit index, RMRs around .10, and the overall alpha for locomotion was .82.

![Figure 1 should be here](image-url)
Assessment

The second confirmatory analysis was conducted using the 12 items to estimate assessment as one factor. The analysis showed that chi-square value was significant (\( \text{Chi}^2 = 362.20, df = 54, p < .001 \)), the goodness of fit index was .91 and the root mean square error of approximation for the default model was .09. However, based on other important statistical indexes, such as the goodness of fit index and the root mean square error of approximation, we assumed that the model fits the data well. All the regression weights/loadings between the factor (i.e., assessment) and its items were significant at \( p < .001 \) (ranging from .26 to .66) with the exception of reversed item 10 (“I don’t spend much time thinking about ways others could improve themselves.”) which had low loading .07 (\( ns, p = .115 \)) (see Figure 2). Hence, item 10 was removed from the analyses. After this, the analysis showed that chi-square value was significant (\( \text{Chi}^2 = 336.88, df = 44, p < .001 \)), the goodness of fit index was .91 and the root mean square error of approximation for the model was .10 (see Figure 3 and Table 3). All the regression weights/loadings between the factor (i.e., assessment) and its 11 items were significant at \( p < .001 \) with ranging from .26 to .66. Thus, the model with just 11 items fits the data well.

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Table 3 should be here

Locomotion, Assessment, and affective well-being

In the third SEM, we conducted a path analysis using locomotion (comprising 12 items) and assessment (comprising 11 items) as the independent variables and positive affect and negative affect as the dependent variables. The analysis showed that chi-square value was significant (\( \text{Chi}^2 = 27.85, df = 1, p < .001 \)). However, as for the other two models previously presented, the
goodness of fit index (.98), comparative fit index (.93), incremental fit index (.93), and normed fit index (.93) indicated that the hypothesized model fits the data well. All the regression weights between the independent variables (locomotion, assessment) and the dependent variables (positive affect and negative affect) were significant at \( p < .001 \). Standardized parameter estimates of correlation and direct effects appear in Figure 4 and both standardized and unstandardized coefficients are listed in Table 4.

Additionally, we tested assessment and locomotion’s equalities of regression paths by comparing the regression weights between locomotion-positive affect to assessment-positive affect and between locomotion-negative affect and assessment-negative affect. The result showed that the effect of locomotion on positive affect was stronger than the effect of assessment on positive affect (Critical Ratios for Differences between Parameters/Z statistic = -15.16, \( p < .001 \)), while the effect of assessment on negative affect was stronger than the effect of locomotion on negative affect (Critical Ratios for Differences between Parameters/Z statistic = 10.73, \( p < .001 \)). See Table 3.

Discussion

Over 10 years of research on self-regulation show that individual differences in regulatory mode tendencies affect many aspects of human behavior, and, consequently, health and well-being. The aim of the present study was twofold: 1) to test the applicability of the RMQ in the Swedish context by examining the unidimensionality of the two RMQ scales (i.e., locomotion scale and assessment scale) and their reliability; 2) to test the predictive and discriminant validity of the locomotion and assessment scales by investigating the relationship between the two regulatory
modes (i.e., locomotion and assessment) and the affective well-being dimensions (i.e., positive affect and negative affect). First of all, as far as we know, the theorized unidimensionallity of the two modes of regulation has been empirically tested only in the English and the Italian versions of the RMQ (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000). Thereby the importance of providing further support to the validity of RMQ across different cultures. Secondly, to our understanding, the regulatory modes are theorized as biopsychosocial in nature (i.e., influenced by temperament, psychological resources, and socialization), thus, positive affect and negative affect were found appropriate for predictive and discriminant validity analyses. After all, besides being markers of well-being, positive and negative affect are independent and stable temperamental dispositions that involve more mood and social traits than extraversion and neuroticism (e.g., Watson & Clark, 1994; Watson, Clark, & Tellegen; 1988; Tellegen, 1993; Garcia, 2011, 2017a).

At a general level, the results obtained here show that both locomotion and assessment have a unidimensional factor structure, thus confirming the findings of previous research conducted with other samples (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah, & Spiegel, 2000). The Swedish RMQ revealed to also have good indexes of reliability for both scales. That being said, the locomotion reversed item 13 (“When I finish one project, I often wait awhile before getting started on a new one.”) and item 16 (“When I decide to do something, I can’t wait to get started.”) showed significant but relatively low loadings (.29 and .15, respectively). In

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To the best of our knowledge this is the first scientific article referring to the regulatory modes as a biopsychosocial complex adaptive system (cf. Garcia, 2017a). Nevertheless, others (Garcia & Lindskär, 2016) have assumed this complex interaction by suggesting regulatory mode profiles: assessor (i.e. high in assessment/low in locomotion), low regulator (i.e. low assessment/low locomotion), high regulator (i.e. high assessment/high locomotion), and locomotor (i.e. low assessment/high locomotion).
addition, the assessment reversed item 10 (“I don’t spend much time thinking about ways others could improve themselves.”) showed low loading (.07, \( p = .115 \)) and was discarded from the final analyses. With regard to the reversed items in both scales (items 10 and 13), despite the potential benefits (e.g., minimizing the problems of inattention and acquiescence), one of the problems derived from using reversed items is that they indeed produce unexpected factor structures (e.g., Netemeyer, Bearden, & Sharma 2003) and miscomprehension (Swain, Weathers, & Niedrich 2008). These problems are actually more marked among subcultural groups, such as, ethnic and racial minorities (Steekamp & Burgees, 2002). In fact, these problems seem to be more pronounced when scales are used in cultures that differ in values, customs, and language from the original culture in which the scale was developed (cf. Wong, Rindfleisch & Burroughs 2003). For instance, Sweden has the fourth place and Italy, one of the few countries in which the RMQ has been validated, the fiftieth place in the 2016 report from the World Economic Forum’s Global Gender Gap (see https://www.weforum.org/reports/the-global-gender-gap-report-2016).

Additionally, Sweden is an individualistic culture (Kjell, Nima, Sikström, Archer, & Garcia, 2013) and widely known for Jantelagen\(^3\), suggesting that Swedes have a tendency to not show off by presenting themselves as better than someone else (Fayolle, Kyro, & Ulijn, 2005). Probably explaining why, a question with a statement such as: “I don’t spend much time thinking about ways others could improve themselves.” (assessment reversed item 10), is problematic in

\(^3\)A description of a pattern of group behavior towards individuals within Nordic countries that negatively portrays and criticizes individual success and achievement as unworthy and inappropriate. Used generally in colloquial speech in the Nordic countries as a sociological term to describe a condescending attitude towards individuality and success, the term refers to a mentality that de-emphasizes individual effort and places all emphasis on the collective, while simultaneously denigrating those who try to stand out as individual achievers. Retrieved from https://en.wikipedia.org/wiki/Law_of_Jante#cite_note-3.
the Swedish context. One way or another, we strongly recommend the replication of the present study in other Swedish samples before totally removing this specific item from future studies.

Furthermore, locomotion predicts high (vs. low) positive affect, while assessment predicts high (vs. low) negative affect. Locomotion orientation is by definition the aspect of self-regulation concerned with maintaining goal-directed progress in a straightforward manner, without undue distractions or delays (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah, & Spiegel, 2000); individuals with high locomotion orientation have a high behavioral activation system (Higgins, Kruglanski, & Pierro, 2003), they engage in goal pursuit promptly and exhibit a stronger task orientation (i.e., the tendency to attend to an activity and persist conscientiously until completion). Furthermore, individuals high in locomotion manage their time more efficiently and, consequently, they feel to have control over the time (Amato, Pierro, Chirumbolo, & Pica, 2014), which is a very important resource for them (Amato, Baldner, Pierro, & Kruglanski, 2017). These features result in a sense of self-regulatory competence and self-maintenance (i.e., maintaining control over attention) among individuals high in locomotion.

Indeed, individuals high on positive effect show these features as well (Cloninger & Garcia, 2015). Within this picture, the results of the present study about the relationship between locomotion and affective well-being, are completely consistent with previous findings describing individuals with high locomotion orientation as active people, full of energy, with full concentration (i.e., high Positive affect; Watson, Clark & Tellegen, 1988). At the same time, the tendency to move forward, typical of the locomotion orientation, lead individuals high in locomotion to pass away from negative feelings (e.g., guilt; regret; Pierro, Leder, Mannetti, Higgins, Kruglanski, & Aiello, 2008; Pierro, Pica, Kruglanski, & Higgins, 2014) and to not stay engaged with unpleasant mode states (i.e., low Negative affect, Watson, Clark, & Tellegen,
On the other hand, the tendency to make social comparisons and to engage frequently in self-evaluation, typical of the assessment orientation, may lead individuals high in assessment to struggle with a large discrepancy perceived between current state and external standards, and between real attainments and the ideal end-states. This determine a subjective distress characterized by the presence of several aversive mood states among individuals high in assessment (i.e., high negative affect). These findings confirm the key role of regulatory mode in affective well-being (Garcia & Lindskär, 2016) and confirm the discriminant and predictive validity of the RMQ in the Swedish context.

**Limitations and suggestions for future research**

To provide a valid instrument to use in the Swedish context is useful at the theoretical, research, and practical levels. At a theoretical level, the results presented here support the notion of two independent constructs of self-regulation that lead to different approach (positive affect) and prevention (negative affect) behaviors (cf. Garcia, 2011, 2017a). That being said, at this point a fully biopsychosocial theory of self-regulation needs to be developed using holistic models, such as, Cloninger’s ternary model of human personality (Cloninger, 2004). This model disentangles personality in biological (harm avoidance, novelty seeking, reward dependence, and persistence), psychological (self-directedness and cooperativeness), and social (self-transcendence) aspects of personality (Cloninger, 2004; Garcia, Cloninger, Lester & Cloninger, 2017; Garcia, Lester, Cloninger & Cloninger, 2017ab; Garcia, Rosenberg, Lester, Cloninger & Cloninger, 2017).

Hence, we suggest that future research should find the Cloninger personality model useful to test if self-regulatory mode theory is biopsychosocial in nature. As far as we understand the theory, self-regulation should be biopsychosocial; but no other work has addressed the concept holistically. At the research level, the Swedish RMQ could be used in the fields of motivation,
health, personality, and organizational settings.

At the practical level, the RMQ could be a useful tool of evaluation of current social challenges in Sweden. For instance, Swedish students report grades that are among the lowest of the other 32 OECD countries (PISA, Sverigesradio, 2013; SNAE, 2009; 2012) along with deteriorations in psychological health (Fleming, Clark, Denny, Bullen, Crengle, Peiris-John, Robinson, Rossen, Sheridan & Lucassen, 2013; Ghofranipour, Saffari, Mahmoudi & Montazeri, 2013). At the same time, many Swedish high schools decrease the number of physical education hours available for their students (Sverigesradio, 2013)—a type of activity that is well-documented for positive effects on psychological health and well-being among adolescents and young adults (e.g., Archer & Garcia, 2014). Interestingly, in a sample of Swedish adolescents, locomotion predicted frequently exercising, which in turn predicted higher grades, while assessment predicted higher grades but also lower levels of well-being (Garcia, Jimmefors, Mousavi, Adrianson, Rosenberg & Archer, 2015). These findings suggest that interventions need to be holistic or biopsychosocial, that is, targeting all aspects of self-regulatory mode in order to target both academic achievement and well-being (cf. Garcia, Drugge, Blixt Samuelsson, Storm, Archer, & Cloninger, 2016). We suggest that the RMQ could be used as a tool in this endeavor.

In addition, since regulatory mode can be situationally induced (Avnet & Higgins, 2003) and situations may influence the preference of one mode over the other (Kruglanski, Orehek, Higgins, Pierro & Shalev, 2010), then, educators and other practitioners might design person-centered interventions that enhance or promote locomotion orientation through movement or exercise.

In spite of its theoretical and practical relevance, the present study has some limitations. We didn’t include other measures of individual differences (e.g., Big Five) in order to test the
incremental validity of regulatory mode in the prediction of affective well-being. Even if previous studies have shown that the relationship between regulatory mode and, for example, psychological vitality or energy, remain unchanged while controlling for the Big Five personality factors (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000), it would be useful to address this issue in cross-cultural studies (cf. Delle Fave & Bassi, 2009, who suggest cross-cultural studies as important to disentangle happiness and related constructs). It is also worth to notice that our sample was unbalanced with respect to gender. The higher presence of males, compared to females, could lead to a selection bias. Despite that earlier studies, using samples from other cultures, have not indicated any significant gender differences (Kruglanski et al., 2000), it could be interesting to investigate the presence/absence of this difference in a Swedish sample and its effect on the factor structure of the RMQ. After all, gender differences seem to depend on the level of egalitarianism within the culture—although counter-intuitive, gender differences in, for example, personality traits, self-esteem, subjective well-being, and depression are larger in relatively high gender egalitarian cultures, such as Sweden (Schmitt, Long, McPhearson, O’Bien, Remmert & Shah, 2016). Another concern is that our sample only comprised high school and university students. Hence, further studies should include a more heterogeneous sample to address differences in, for example, gender, education level and also age. Moreover, although most of the studies using the RMQ disregard of the lie scale, as we did, and some have also applied only one of the scales (e.g., locomotion; Pierro, Giacomantonio, Pica, Kruglanski & Higgins, 2013), it might be useful to consider the presence of social desirability in future studies. Also, longitudinal designs would provide insights on the Swedish RMQ’s test-retest validity and perhaps also a better understanding of the causal relationships between regulatory mode and affectivity.
Finally, we urge person-oriented approaches for the investigation and development of Regulatory Mode Theory. Especially since peoples’ tendency to prefer either locomotion and assessment is probably influenced by unrelated biological (e.g., temperament), psychological and social resources and conditions (Kruglanski, Thompson, Higgins, Atash, Pierro, Shah & Spiegel, 2000). In other words, locomotion and assessment are independent and orthogonal biopsychosocial modes of operation, thus, some individuals can be high on one mode and low on the other mode, low on both modes, or high on both modes (cf. Garcia & Lindskär, 2016). Person-oriented statistical approaches are methods that focus on internal patterns, in contrast to variable-oriented approaches which focus on individual differences (Lundh, 2015). For instance, from a person-oriented framework these two modes of operation (locomotion and assessment) within the individual can be seen as interwoven components with whole-system properties (Bergman & Wångby, 2014). The outlook of the individual as a whole-system unit is then best studied by analyzing patterns of information (Bergman & Wångby, 2014; Bergman, Magnusson, El-Khoury, 2003; Bergman & Wångby, 2014; Bergman & Magnusson, 1997; see also Cloninger, Svrakic & Svrakic, 1997, who explain nonlinear dynamics in complex adaptive systems). There is, indeed, an increasing amount of person-oriented methods that can be used (Garcia, 2017ab; Garcia & Lindskär, 2016; Garcia, MacDonald & Archer, 2015; Bergman & Lundh, 2015; Valsiner, 2015; Molenaar, 2015; Laursen, 2015; Asendorpf, 2015; von Eye & Wiederman, 2015; Aunola, Tolvanen, Kiuru, Kaila, Mullola & Nurmi, 2015; Baker, 2015; MacDonald & Kormi-Nouri, 2013) as well as statistical software aimed for these endeavors (ROPstat; Vargha, Torma & Bergman, 2015).

Conclusion and final remarks
One way to improve the applicability—and consequently the usefulness—of a measure is to verify its reliability and validity in different cultural contexts. The present study tested and confirmed the one-dimensionality structure and the reliability of the two scales of the RMQ (i.e., locomotion and assessment) in the Swedish context. Moreover, the present study confirmed the discriminant validity of self-regulation modes on affective well-being dimensions. This is important because the two affectivity dimensions are also measures of anxiety, which involves high negative affect, and depression, which involves both high negative affect and low positive affect (Clark & Watson, 1991). We suggest that the Swedish version of the RMQ, with only minor modifications, is a useful instrument to tap individual differences in locomotion and assessment. In sum, the present study contributes to the validation of the RMQ in the Swedish culture, adds support to the theoretical framework of self-regulatory mode, and suggests that the regulatory mode system could be a psychological complex adaptive system, that along with the biological affectivity system, forms a larger biopsychosocial system of self-regulation.

References

Amato, C., Baldner, C., Pierro, A., & Kruglanski, A.W. (2017). “Tempus Divitiae”: Locomotion Orientation and Evaluation of Time as a Precious Resource. *Time & Society*, in press.

Amato, C., A., Baron, R., Barbieri, B., Bélanger, J. J., & Pierro, A. (2017). Regulatory Modes and Entrepreneurship: The Mediational Role of Alertness in Small Business Success. *Journal of Small Business Management*. DOI: 10.1111/jsbm.12255

Amato, C., Pierro, A., Chirumbolo, A., & Pica, G. (2014). Regulatory modes and time management: How locomotors and assessors plan and perceive time. *International Journal of Psychology, 49*(3), 192-199.
Asendorpf, J. B. (2015). Person-oriented approaches within multi-level perspective. *Journal of Person-Oriented Research, 1*(1-2), 48-55. DOI: 10.17505/jpor.2015.06.

Aunola, K., Tolvanen, A., Kiuru, N., Kaila, K., Mullola, S., & Nurmi, J-E. (2015). A person-oriented approach to diary data. Children’s temperamental negative emotionality increases susceptibility to emotion transmission in father-child dyads. *Journal of Person-Oriented Research, 1*(1-2), 72-86. DOI: 10.17505/jpor.2015.08.

Avnet, T., & Higgins, E. T. (2003). Locomotion, assessment, and regulatory fit: Value transfer from “how” to “what”. *Journal of Experimental Social Psychology, 39*(5), 525-530.

Baker, S. M. (2015). Adaptive equilibrium regulation: A balance act in two timescales. *Journal of Person-Oriented Research, 1*(1-2), 99-109. DOI: 10.17505/jpor.2015.10.

Benjamin, L., & Flynn, F. J. (2006). Leadership style and regulatory mode: Value from fit?’. *Organizational Behavior and Human Decision Processes, 100*(2), 216-230. Bergman, L. R., & Lundh, L-G. (2015). Introduction: The person-oriented approach: Roots and roads to the future. *Journal of Person-Oriented Research, 1*(1-2), 1-6. DOI: 10.17505/jpor.2015.01.

Bergman, L. R., & Magnusson, D. (1997). A person-oriented approach in research on developmental psychopathology. *Development and Psychopathology, 9*(2), 291–319. DOI: 10.1017/S095457949700206X.

Bergman, L. R., Magnusson, D., & El-Khoury, B. M. (2003). Studying individual development in an interindividual context: A person-oriented approach. Vol. 4 in the series Paths through life (D. Magnusson, Ed.). Mahwah, NJ: Erlbaum.

Bergman, L. R., & Wångby, M. (2014). The person-oriented approach: A short theoretical and practical guide. Eesti Haridusteaduste Ajakiri, 2, 29-49. Doi: 10.12697/eha.2014.21.02b.
Borderline personality disorder in the context of self-regulation: Understanding symptoms and hallmark features as deficits in locomotion and assessment. *Personality and Individual Differences, 44*(1), 22-31.

Carver, C. S., & Scheier, M. (1990). *Principles of self-regulation: Action and emotion*. Guilford Press.

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*, 316–336.

Cloninger, C. R. (2004). *Feeling good: The science of well-being*. New York: Oxford University Press.

Cloninger, C. R., Garcia, D. (2015). The heritability and development of positive affect and emotionality. In: Pluess M, ed. *Genetics of psychological well-being—the role of heritability and genetics in positive psychology*. New York: Oxford University Press, 97–113.

Cloninger, C. R., Svrakic, N. M., & Svrakic, D. M. (1997). Role of personality self-organization in development of mental order and disorder. *Development and Psychopathology, 9*, 881-906.

Delle Fave, A., & Bassi, M. (2009). The contribution of diversity to happiness research. *The Journal of Positive Psychology, 4*, 205–207. DOI 10.1080/17439760902844319.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542-575.

Fayolle, A., Kyrö, P., & Ulijin, J. (2005). The entrepreneurship debate in Europe: A matter of history and culture? In A. Fayolle, P, Kyrö, and J. Ulijin (Eds.), *Entrepreneurship Research in Europe: Outcomes and Perspectives*. Cheltenham, UK: Edward Elgar.
Fleming, T.M., Clark, T., Denny, S., Bullen, P., Crengle, S., Peiris-John, R., Robinson, E., Rossen, F. V., Sheridan, J., & Lucassen, M. (2013) Stability and Change in the Mental Health of New Zealand Secondary School Students 2007-2012: Results from The National Adolescent Health Surveys. *Aust N Z J Psychiatry* 1-9.

Garcia, D. (2011) *Adolescents’ happiness: The role of the affective temperament model on memory and apprehension of events, subjective well-being, and psychological well-being.* Ph.D. Thesis, University of Gothenburg, Gothenburg.

Garcia, D. (2012). The Affective Temperaments: Differences between Adolescents in the Big Five Model and Cloninger’s Psychobiological Model of Personality. *Journal of Happiness Studies*, 13, 999–1017. DOI: 10.1007/s10902-011-9303-5.

Garcia, D. (2017a). Affective Profiles Model. In V. Zeigler-Hill & T. Shackelford (Eds.), *Encyclopedia of Personality and Individual Differences* (pp. x-x). Cham, Switzerland: Springer. Manuscript in press.

Garcia, D. (2017b). Dark Cube. In V. Zeigler-Hill & T. Shackelford (Eds.), *Encyclopedia of Personality and Individual Differences* (pp. x-x). Cham, Switzerland: Springer. Manuscript in press.

Garcia, D., Adrianson, L., Archer, T., & Rosenberg, P. (2015). The Dark Side of The Affective Profiles: Differences and Similarities in Psychopathy, Machiavellianism, and Narcissism. *Sage Open*, 5 (4). DOI: 10.1177/2158244015615167.

Garcia, D., & Archer, T. (2016). Empowerment (Character, Motivation, and Regulatory Mode), Positive Affect, and Resilience. *The Journal of Happiness and Well-Being*, 4, 212-225.
Garcia D, Cloninger KM, Lester N, Cloninger CR. 2017. Self-directedness. In: Zeigler- Hill V, Shackelford T, eds. Encyclopedia of personality and individual differences. Cham: Springer, 1–3.

Garcia, D., Drugge, A., Blixt Samuelsson, H., Storm, U., Archer, T., & Cloninger, K. M. (2016). The Need of Holistic Interventions in Schools: The Promotion of Healthy and Sustainable Personality Development among Children. Clinical and Experimental Psychology, 2:2. DOI: 10.4172/2471-2701.1000129.

Garcia, D., Ghiabi, B., Rosenberg, P., Nima, A. A., & Archer, T. (2015). Differences between Affective Profiles in Temperament and Character in Salvadorians: The Self-fulfilling Experience as a Function of Agentic (Self-directedness) and Communal (Cooperativeness) Values. International Journal of Happiness and Development, 2, 22-37. DOI: 10.1504/IJHD.2015.067592.

Garcia, D., Jimmefors, A., Mousavi, F., Adrianson, L., Rosenberg, P., & Archer, T. (2015). Self-regulatory Mode (Locomotion and Assessment), Well-Being (Subjective and Psychological), and exercise behavior (Frequency and Intensity) in Relation to High School Pupils’ Academic Achievement. PeerJ, 3, 847. DOI: 10.7717/peerj.847.

Garcia D, Lester N, Cloninger KM, Cloninger CR. 2017a. Cooperativeness. In: Zeigler- Hill V, Shackelford T, eds. Encyclopedia of personality and individual differences. Cham: Springer.

Garcia D, Lester N, Cloninger KM, Cloninger CR. 2017b. The temperament and character inventory (TCI). In: Zeigler-Hill V, Shackelford T, eds. Encyclopedia of personality and individual differences. Cham: Springer, 1–3.
Garcia, D., & Lindskär, E. (2016). Regulatory Mode Profiles and the Organization of the Flow of Time. *International Journal of School and Cognitive Psychology, 3*,3. DOI: 10.4172/2469-9837.1000184.

Garcia, D., MacDonald, S., & Archer, T. (2015). Two Different Approaches to The Affective Profiles Model: Median Splits (Variable-Oriented) and Cluster Analysis (Person-Oriented). *PeerJ, 3*:e1380. DOI: 10.7717/peerj.1380.

Garcia, D., & Moradi, S. (2013). The Affective Temperaments and Well-Being: Swedish and Iranian Adolescents' Life Satisfaction and Psychological Well-Being. *Journal of Happiness Studies, 14*, 689–707. DOI: 10.1007/s10902-012-9349-z.

Garcia, D., Nima, A. A., Lindskär, E., Jimmefors, A., Archer, T., MacDonald, S. (2016). Questions of Self-regulation and Affect: Affectivity, Locomotion, Assessment, and Psychological Well-Being. *Asian Journal of Health Psychology, 1*, 35-48.

Garcia, D., Rosenberg, P., Erlandsson, A., & Siddiqui, A. (2010). On Lions and Adolescents: Affective Temperaments and the Influence of Negative Stimuli on Memory. *Journal of Happiness Studies, 11*, 477–495. DOI: 10.1007/s10902-009-9153-6.

Garcia D, Rosenberg P, Lester N, Cloninger KM, Cloninger CR. 2017. Self- transcendence. In: Zeigler-Hill V, Shackelford T, eds. Encyclopedia of personality and individual differences. Cham: Springer.

Garcia, D., Rosenberg, P., Lindskär, E., Amato,C., & Nima, A. A. (2017). The Swedish Version of the Regulatory Mode Questionnaire. *Data in Brief, 14*, 251-254. DOI: 10.1016/j.dib.2017.07.050.
Ghofranipour, F., Saffari, M., Mahmoudi, M., & Montazeri, A. (2013) Demographical and Psychological Determinants of Depression, Among a Sample of Iranian Male Adolescents. *Int J Prev Med* 4, 1217-1223.

Giacomantonio, M., Mannetti, L., & Pierro, A. (2013) Locomoting toward Well-Being or Getting Entangled in A Material World: Regulatory Modes And Affective Well-Being. *J EconPsychol, 38*, 80-89.

Gunderson, J. G., Triebwasser, J., Phillips, K. A., & Sullivan, C. N. (1999). Personality and vulnerability to affective disorders. In C. R. Cloninger (Ed.), *Personality and psychopathology* (pp. 3–32). New York: American Psychiatric Publishing.

Higgins, E.T., Kruglanski, A.W., & Pierro, A. (2003). Regulatory Mode: Locomotion and Assessment as Distinct Orientations. In: M. P. Zanna, (Ed.), *Advances in Experimental Social Psychology*, Academic Press: New York, NY.

Hong, R. Y., Tan, M. S., & Chang, W. C. (2004). Locomotion and assessment: Self-regulation and subjective well-being. *Personality and Individual Differences, 37*(2), 325–332.

Jimmefors, A., Garcia, D., Rosenberg, P., Fariba, M., Adrianson, L., & Archer, T. (2014). Locomotion (Empowering) and Assessment (Disempowering) Self-regulatory Dimensions as a Function of Affective Profile in High School Students. *International Journal of School and Cognitive Psychology, 1*, 103. DOI:10.4172/2469-9837.1000103.

Kjell, O. N. E., Nima, A. A., Sikström, S., Archer, T., Garcia, D. (2013), Iranian and Swedish adolescents: differences in personality traits and well-being. PeerJ 1:e197; DOI 10.7717/peerj.197.

Kline, R.B. (2010). *Principles and Practice of Structural Equation Modeling*. 3rd edition. New York: Guilford Press.
Kruglanski, A.W., Pierro, A., Higgins, E.T., Capozza, D. 2007. “On the Move” or “Staying Put”: Locomotion, Need For Closure And Reactions To Organizational Change. *Journal of Applied Social Psychology* 37(6), 1305-1340 DOI 10.1111/j.1559-1816.2007.00214.x

Kruglanski, A. W., Thompson, E. P., Higgins, E. T., Atash, M. N., Pierro, A., Shah, J. Y., & Spiegel, S. (2000). To "do the right thing" or to "just do it": Locomotion and assessment as distinct self-regulatory imperatives. *Journal of Personality and Social Psychology, 79*(5), 793-815.

Kruglanski, A.W., Orehek, E., Higgins, E.T., Pierro, A., & Shalev, I. (2010). Modes of Self-Regulation: Assessment and Locomotion as Independent Determinants in Goal Pursuit. In R. Hoyle (Ed.). *Handbook of personality and self-regulation* (pp. 375-402). Hoboken, NJ: Wiley.

Larsen, R. J., & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. *Journal of Personality and Social Psychology, 61*, 132–140.

Laursen, B. (2015). I don’t quite get it.: Personal experiences with the person-centered approach. *Journal of Person-Oriented Research, 1* (1-2), 42-47. DOI: 10.17505/jpor.2015.05.

Lundh, L-G (2015) The Person as a Focus for Research – The Contributions of Windelband, Stern, Allport, Lamieil, and Magnusson. *Journal of Person-Oriented Research, 1* (1-2), 15-33. DOI: 10.17505/jpor.2015.03.

MacDonald S, Kormi-Nouri R (2013) The affective personality, sleep, and autobiographical memories. The Journal of Positive Psychology: dedicated to furthering research and promoting good practice 8, 305-313.
Mannetti, L., Leder, S., Insalata, L., Pierro, A., Higgins, T., & Kruglanski, A. (2009). Priming the ant or the grasshopper in people's mind: How regulatory mode affects inter-temporal choices. *European Journal of Social Psychology, 39*(6), 1120-1125.

Molenaar, P. C. M. (2015). On the relation between person-oriented and subject-specific approaches. *Journal of Person-Oriented Research, 1* (1-2), 34-41. DOI: 10.17505/jpor.2015.04.

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003), *Scaling Procedures: Issues and Applications*, Newbury Park, CA: Sage Publications, Inc.

Pierro, A., Giacomantonio, M., Pica, G., Krugranski, A. W., & Higgins, E. T. (2013). Locomotion and the preference for multi-tasking: Implications for well-being. *Motivation and Emotion, 37*, 213-223. DOI: 10.1007/s11031-012-9300-y.

Pierro, A., Leder, S., Mannetti, L., Higgins, E. T., Kruglanski, A. W., & Aiello, A. (2008). Regulatory mode effects on counterfactual thinking and regret. *Journal of Experimental Social Psychology, 44*(2), 321-329.

Pierro, A., Pica, G., Kruglanski, A. W., & Higgins, T. E. (2014). Regulatory mode orientations and self-forgiveness. Unpublished manuscript, University of Rome “La Sapienza,” Rome, Italy.

Rapp Ricciardi, M., Åkerman, J., Eerikäinen, P., Ambjörnsson, A., Andersson Arntén, A-C., Archer, T., & Garcia, D. (2014). Understanding Group and Leader (UGL) Trainers’ Personality Characteristics and Affective Profiles. *Frontiers in Psychology, 5*:1191. DOI: 10.3389/fpsyg.2014.01191.
Schmitt, D. P., Long, A. E., McPhearson, A., O’Brien, K., Remmert, B., & Shah, S. H. (2016). Personality and gender differences in global perspective. *International Journal of Psychology*. Advance online publication. doi:10.1002/ijop.12265

Schütz, E., Archer, T., & Garcia, D. (2013). Character Profiles and Adolescents’ Self-reported Affect. *Personality and Individual Differences, 54*(7), 841–844. DOI: 10.1016/j.paid.2012.12.020.

Shalev, I., & Sulkowski, M. L. (2009). Relations between distinct aspects of self-regulation to symptoms of impulsivity and compulsivity. *Personality and Individual Differences, 47*(2), 84-88.

Smith, C.A., Haynes, K.N., Lazarus, R.S., & Pope, L.K. (1993). In search of the "hot" cognitions: attributions, appraisals, and their relation to emotion. *Journal of Personality and Social Psychology, 65*(5), 916–929.

SNAE. 2009. Försämring av gymnasieelevers kunskaper i matematik och fysik. [Deterioration of high school pupils’ knowledge in mathematics and physics]. Available at http://www.skolverket.se/om-skolverket/press/pressmeddelanden/2009/kraftig-forsamring-av-gymnasieelevernas-kunskaper-i-matematik-och-fysik-1.91259.

SNAE. 2012. Sammanfattning av PISA-undersökning. [Summary of the PISA investigation]. Available at http://www.skolverket.se/publikationer?id=3126.

Steenkamp, J-B. E. M., & Burgees, S. (2002). Optimum stimulation level and exploratory consumer behavior in an emerging consumer market. *International Journal of Research in Marketing, 19*, 131-150.
Sverigesradio (2013). För lite idrott i skolan tycker forskare. [Too little physical education in school according to scientists]. Available at http://sverigesradio.se/sida/artikel.aspx?programid=83&artikel=1188963.

Swain, S. D., Weathers, D., & Niedrich, R. W. (2008). Assessing Three Sources of Misresponse to Reversed Likert Items. *Journal of Marketing Research, 45*, 116-131.

Tabachnick B.G., Fidell, L.S. (2007). *Using multivariate statistics* (Fifth edition). Boston: Pearson Education, Inc.

Tellegen, A. (1993). Folk concepts and psychological concept of personality and personality disorder. *Psychological Inquiry, 4*, 122–130.

Valsiner, J. (2015). From person-oriented to person-centered psychology: Abstracting structures of relationships. *Journal of Person-Oriented Research, 1* (1-2), 7-14. DOI: 10.17505/jpor.2015.02.

Vargha, A., Torma, B., Bergman, L. R. (2015). ROPstat: A general statistical package useful for conducting person-oriented analyses. *Journal of Person-Oriented Research, 1*, 87-97. DOI: 10.17505/jpor.2015.09.

von Eye, A., & Wiedermann, W. (2015). General linear models for the analysis of single subject data and for the comparison of individuals. *Journal of Person-Oriented Research, 1* (1-2), 56-71. DOI: 10.17505/jpor.2015.07.

Vazeou-Nieuwenhuis, A., Orehek, E., & Scheier, M. F. (2017). The meaning of action: Do self-regulatory processes contribute to a purposeful life?. *Personality and Individual Differences, 116*, 115-122.

Cloninger CR (2004) Feeling good: The science of well-being. Oxford University Press, New York, NY.

Watson, D., & Clark, L. A. (1994). *The PANAS–X: manual for the positive and negative affect schedule – Expanded form*. University of Iowa Press.
Watson, D., Clark, L.A., & Tellegen A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

Wong, N., Rindfleisch, A., & Burroughs, J. E. (2003). Do Reverse-Worded Items Confound Measures in Cross-Cultural Consumer Research? The Case of the Material Values Scale. *Journal of Consumer Research, 30*, 72-91.
Table 1 (on next page)

The Swedish translation of the Regulatory mode questionnaire
| Item No. | English                                                                 | Swedish                                                                 | Keywords                      |
|---------|------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------|
| 1.      | I don’t mind doing things even if they involve extra effort.          | Jag har inget emot att göra saker även om det innebär en extra ansträngning. | extra effort                  |
| 2(R).   | I never evaluate my social interactions with others after they occur.  | Jag utvärderar aldrig mina sociala samspel med andra efter att de hänt. | evaluate interactions         |
| 3.      | I am a “workaholic.”                                                    | Jag är en ”arbetsnarkoman”.                                            | workaholic                    |
| 4.      | I feel excited just before I am about to reach a goal.                 | Jag känner mig upprymd precis innan jag uppnår ett mål.                 | excited                       |
| 5.      | I enjoy actively doing things, more than just watching and observing.  | Jag tycker bättre om att aktivt göra saker istället för att bara titta på och observera. | actively do things            |
| 6.      | I spend a great deal of time taking inventory of my positive and negative characteristics. | Jag lägger ner mycket tid på att inventera mina positiva och negativa karaktärsdrag. | inventory of characteristics   |
| 7.      | I like evaluating other people’s plans.                               | Jag tycker om att utvärdera andra människors planer.                   | evaluate others’ plans        |
| 8.      | I am a “doer.”                                                        | Jag är en människa som får saker och ting gjorda.                      | doer                          |
| 9.      | I often compare myself with other people.                             | Jag jämför ofta mig själv med andra.                                   | compare to others             |
| 10(R.)  | I don’t spend much time thinking about ways others could improve themselves. | Jag spenderar inte mycket tid på att tänka på hur andra kan förbättra sig själva. | not improve others           |
| 11.     | I often critique work done by myself and others.                      | Jag kritiserar ofta mitt och andras arbete.                           | critique self and others      |
| 12.     | I believe one should never engage in leisure activities.              | Jag anser att man aldrig bör engagera sig i fritidsaktiviteter.        |                              |
| 13(R).  | When I finish one project, I often wait awhile before getting started on a new one. | När jag avslutar ett projekt, väntar jag ofta ett tag innan jag påbörjar nästa. | wait before start             |
| 14.     | I have never been late for work or for an appointment.                | Jag har aldrig varit sen till arbetet eller ett avtalat möte.           |                              |
| 15.     | I often feel that I am being evaluated by others.                     | Jag känner ofta att jag blir bedömd av andra.                          | evaluated by others           |
| 16.     | When I decide to do something, I can’t wait to get started.           | När jag bestämmt mig för att göra något kan jag inte sätta igång snabbt nog. | can’t wait                    |
| 17.     | I always make the right decision.                                     | Jag fattar alltid rätt beslut.                                         |                              |
| 18.     | I never find faults with someone I like.                             | Jag hittar aldrig några fel på människor jag tycker om.                 |                              |
| 19.     | I am a critical person.                                               | Jag är en kritisk person.                                              | critical person               |
| 20.     | I am very self-critical and self-conscious about what I am saying.    | Jag är väldigt självkritisk och självmedveten om vad jag säger.         | self-critical and self-conscious |
| 21.     | By the time I accomplish a task, I already have the next one in mind. | Medans jag slutför ett projekt har jag redan börjt tänka på nästa.     | next task in mind             |
| 22.     | I often think that other people’s choices and decisions are wrong.    | Jag tycker ofta att andra människors val och beslut är fel.             | others are wrong              |
| 23.     | I have never hurt another person’s feelings.                          | Jag har aldrig sårat en annan människas känslor.                       |                              |
| 24(R).  | I am a “low energy” person.                                           | Jag är en människa med låg energi.                                     | low energy                    |
| 25.     | Most of the time my thoughts are occupied with the task that I wish to accomplish. | För det mesta kretser mina tankar kring den uppgift som jag vill slutföra. | thoughts occupied with tasks |
| 26.     | I feel that there is no such thing as an honest mistake.              | Jag anser att det inte finns några årliga misstap.                      |                              |
| 27(R).  | I rarely analyze the conversations I have had with others after they occur. | Jag analyserar sällan konversationer jag haft med andra efter att de inträffat. | rarely analyze conversations |
| 28.     | When I get started on something, I usually persevere until I finish.  | När jag påbörjar något håller jag alltid ut tills jag slutfört det.      | persevere until finish        |
| 29.     | I am a “go-getter.”                                                   | Jag är en handlingsmänniska.                                            | go-getter                     |
| 30.     | When I meet a new person I usually evaluate how well he or she is doing on various dimensions (e.g., looks, achievements, social status, clothes). | När jag träffar en ny människa bedömer jag oftast hur han eller hon klarar sig på olika plan (t. ex uteendes, prestationer, social status, kläder). | evaluate dimensions          |
Note: light grey cells = locomotion items, dark grey cells = assessment items, white cells = lie scale (not used in the present study), and (R) = reversed item. Item 10 was removed from the final analysis due to low loading. Adapted from Garcia, Rosenberg, Lindskär, Amato & Nima, 2017, with permission from D. Garcia.
Table 2 (on next page)

Correlations, Cronbach’s alpha, Means and SD (±) for all variables in the study
Table 2. Correlations, Cronbach’s alpha, Means and SD (±) for all variables in the study.

|                        | Affective Well-Being | Regulatory Mode |
|------------------------|----------------------|-----------------|
|                        | Positive Affect      | Negative Affect | Locomotion | Assessment |
| Affective Well-Being   |                      | -               |            |            |
| Negative Affect        | .29**               | -               |            |            |
| Self-regulatory Mode   |                      |                 |            |            |
| Locomotion             | .53**               | -.13**          | -          |            |
| Assessment             | -.13**              | .40**           | .08*       | -          |
| Mean and SD (±)        | 3.54±0.64           | 2.21±0.67       | 3.96±0.66  | 3.53±0.69  |
| Cronbach’s alpha       | .85                  | .90             | .76        | .79        |

Note: *p < .05. **p < .01. Light grey cells: significant correlations between participants’ locomotion and affectivity scores; dark grey cells: significant correlations between participants’ assessment and affectivity scores; black cells: significant correlations within self-regulatory modes and affectivity dimensions, respectively.
Table 3 (on next page)

Standardized and unstandardized structural coefficients for the relationship between self-regulatory modes (locomotion and assessment) and affective well-being (positive affect and negative affect)
Table 3. Standardized and unstandardized structural coefficients for the regression weights/loadings between the Swedish version of the RMQ-scales locomotion and assessment and its respective items (N= 650).

| Regulatory Mode | Item                              | β   | SE  | B    | P     |
|-----------------|-----------------------------------|-----|-----|------|-------|
| Locomotion      | 1. extra effort.                  | .55 | .11 | 1.00 | < .001|
|                 | 3. workaholic                     | .50 | .11 | 1.07 | < .001|
|                 | 4. excited                        | .34 | .08 | 0.61 | < .001|
|                 | 5. actively doing things          | .53 | .09 | 0.96 | < .001|
|                 | 8. doer                           | .73 | .11 | 1.31 | < .001|
|                 | 13(R) wait before start           | .29 | .10 | 0.62 | < .001|
|                 | 16. can’t wait                    | .15 | .09 | 0.29 | < .001|
|                 | 21. next task in mind             | .38 | .10 | 0.82 | < .001|
|                 | 24(R). low energy                 | .49 | .11 | 1.08 | < .001|
|                 | 25. thoughts occupied with task   | .32 | .09 | 0.60 | < .001|
|                 | 28. persevere until finish        | .56 | .11 | 1.13 | < .001|
|                 | 29. go-getter                     | .72 | .10 | 1.29 | < .001|
| Assessment      | 2(R). evaluate interactions       | .26 | .10 | 0.54 | < .001|
|                 | 6. inventory of characteristics   | .46 | .12 | 0.99 | < .001|
|                 | 7. evaluate other’s plans         | .53 | .13 | 1.16 | < .001|
|                 | 9. compare to others              | .55 | .14 | 1.21 | < .001|
|                 | 11. critique self and others      | .63 | .14 | 1.31 | < .001|
|                 | 15. evaluated by others           | .49 | .12 | 1.00 | < .001|
|                 | 19. critical person               | .66 | .14 | 1.38 | < .001|
|                 | 20. self-critical and self-conscious |   |     |      |       |
|                 | 22. others are wrong              | .48 | .11 | 0.92 | < .001|
|                 | 27(R). rarely analyze conversations| .42 | .12 | 0.91 | < .001|
|                 | 30. evaluate dimensions           | .44 | .11 | 1.00 | < .001|
Table 4 (on next page)

Standardized and unstandardized structural coefficients for the relationship between self-regulatory modes (locomotion and assessment) and affective well-being (positive and negative affect) ($N = 650$).
Table 4. Standardized and unstandardized structural coefficients for the relationship between self-regulatory modes (locomotion and assessment) and affective well-being (positive affect and negative affect) \((N=650)\).

| Predictor     | Outcome         | \(\beta\) | SE  | \(B\)  | \(p\)  |
|---------------|-----------------|-----------|-----|--------|--------|
| Locomotion    | Positive Affect | .54       | .03 | .53    | < .001 |
| Assessment    | Positive Affect | -0.18     | .03 | -0.16  | < .001 |
| \(R^2\)       |                 | .31       |     |        |        |
| Locomotion    | Negative Affect | -0.16     | .04 | -0.16  | < .001 |
| Assessment    | Negative Affect | .41       | .03 | .39    | < .001 |
| \(R^2\)       |                 | .18       |     |        |        |

Note: light grey cells: the effect of locomotion on positive affect was stronger than the effect of assessment on positive affect \((Z = -15.16, p < .001)\); dark grey cells: the effect of assessment on negative affect was stronger than the effect of locomotion on negative affect \((Z = 10.73, p < .001)\).
Figure 1

SEM showing the standardized parameter estimates between the latent factor (i.e., locomotion) and the 12 locomotion items from the RMQ

Note: Chi square = 268.79, df = 54, p < .001; goodness of fit index = .93 and the root mean square error of approximation = .08 (N = 650).
Figure 2

SEM showing the standardized parameter estimates between the latent factor (i.e., assessment) and the 12 assessment items from the RMQ.

Note: Chi square = 362.20, df = 54, p < .001; goodness of fit index = .91 and the root mean square error of approximation = .09 (N = 650).
Figure 3

SEM showing the standardized parameter estimates among the latent factor (i.e., assessment) and the 11 assessment items (i.e., without item 10) from the RMQ.

Note: *Chi square* = 336.88, *df* = 44, *p* < .001; *goodness of fit index* = .91 and the *root mean square error of approximation* = .10 (*N* = 650).
Figure 4

SEM showing the standardized parameter estimates for the relationship between self-regulatory modes (locomotion and assessment) and affective well-being (positive affect and negative affect).

Note: Chi square = 27.85, df = 1, p < .001; goodness of fit index was .98, comparative fit index = .93, incremental fit index = .93 and normed fit index = .93 (N = 650).