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Disentangling within-person changes and individual differences among fundamental need satisfaction, attainment of acquisitive desires, and psychological health

Manuscript submitted: January, 12th, 2012

Manuscript resubmitted: May 24th, 2012

Manuscript resubmitted: June 11th, 2012

Word count: 3008

24 **Abstract**

25 We explored within-person and individual difference associations among basic psychological need
26 satisfaction (autonomy, competence, and relatedness), attainment of acquisitive desires (wealth and
27 popularity) and indicators of well- and ill-being. Participants were 198 undergraduates (51% male)
28 who completed an inventory multiple times over a university semester. Analyses revealed that
29 increased satisfaction of all the needs and desires beyond participants' normal levels, with the
30 exception of relatedness, were associated with greater psychological welfare. Nonetheless,
31 individual differences in well-being were only predicted by psychological need satisfaction, and not
32 by the attainment of acquisitive desires. Hence, the realization of acquisitive desires may elicit
33 within-person increases in psychological welfare; however, satisfying innate needs may be a better
34 bet for long term psychological health.

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36 **Keywords:** Money, social recognition, psychological needs, well-being, self-determination

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46 Disentangling within-person changes and individual differences among fundamental need
47 satisfaction, attainment of acquisitive desires, and psychological health

48 **1. Introduction**

49 Whether gratification of one's desires for riches and status leads to psychological well-being
50 or satisfaction of other fundamental psychological needs plays a more significant role has been
51 widely debated in the literature (e.g., Sheldon, Elliot, Kim, & Kasser, 2001). The early work of
52 Murray (1938) implied that any motive that drives action and is associated with satisfying
53 experiences when met may be considered a need. Contrastingly, supporters of self-determination
54 theory (SDT) advocate that humans are innately driven to pursue autonomy, competence, and
55 relatedness, and only the satisfaction of these psychological nutrients are essential to experience well-
56 being (e.g., Vansteenkiste, Niemiec, & Soenens, 2010). We wished to extend current knowledge by
57 extricating individual differences and within-person changes among need satisfaction, attainment of
58 desires, and psychological health to help elucidate differences between fundamental needs and
59 acquisitive desires.

60 A fundamental psychological need must meet several criteria, including the elicitation of
61 positive consequences when met, as well as ill effects when thwarted (Baumeister & Leary, 1995).
62 Satisfying the desire for wealth may have evolutionary benefits for one's health and, therefore, may
63 represent a psychological need (e.g., Kanazawa, 2003). Similarly, popularity has been discussed as a
64 human need by socio-analytical psychologists, who propose that individuals are motivated to
65 accumulate status so one can psychologically thrive (e.g., Hogan, 1996). Alternatively, evidence
66 exists that suggests the satisfaction of the yearning to be wealthy and popular is unconnected to
67 psychological health (e.g., Niemiec, Ryan, & Deci, 2009), irrespective of the value placed on

68 fulfilling these goals (Vansteenkiste et al., 2010). These longings are, therefore, merely *desires*, rather
69 than *needs*.

70 Rather than focusing on satisfying one's desire for social status and material prosperity, self-
71 determination theorists (e.g., Vansteenkiste et al., 2010) advocate that humans are inherently driven to
72 pursue competence (effectiveness within one's environment), relatedness (engagement in meaningful
73 social relationships), and autonomy (self-initiation of one's behavior). Using SDT as a framework,
74 studies have shown that the fulfilment of autonomy, competence, and relatedness is positively
75 associated with well-being and negatively related to ill-being (e.g., Reis, Sheldon, Gable, Roscoe, &
76 Ryan, 2000). This research also suggests that the relations among the three needs and indicators of
77 well- and ill-being may differ according to the exploration of within-person changes or individual
78 differences. However, a comparison between fulfilment of specific psychological needs advocated by
79 self-determination theorists and acquisitive desires was not conducted and is, therefore, the focus of
80 the present study.

81 We aimed to fill this gap by exploring the extent to which satisfaction of five needs and
82 desires (i.e., autonomy, competence, relatedness, wealth, and popularity,) predicted various indicators
83 of well- (i.e., positive affect and vitality) and ill-being (i.e., negative affect, sleep disturbance, and
84 frequency of headaches). Regarding popularity, we replicated Sheldon and colleagues' (2001)
85 attempts to stay faithful to the 'American dream' lay perspective of popularity; although we
86 acknowledge that this may have some conceptual overlap with individuals' influence over others.
87 Sheldon et al. consistently found stronger relationships among the three SDT-advocated needs and
88 affect, compared to wealth and popularity. The present study attempted to build on this work by
89 examining the study variables over a three-month time period, which allowed us to explore whether
90 a) individual differences in the satisfaction of the needs and desires were associated with well- and ill-

91 being, and b) within-person fluctuations were related to well- and ill-being. This disentanglement is
92 significant because the two levels of relationships are conceptually and statistically distinct. Fulfilling
93 a desire may be associated with positive consequences at the within-person level but not individual
94 differences in well-being. Satisfaction of a need may also be related to within-person changes in well-
95 being, however, individuals whose needs are met should also report greater levels of well-being,
96 compared to individuals whose needs are not met (Vansteenkiste et al., 2010). In other words, it is the
97 satisfaction of fundamental needs, and not acquisitive desires, which separate those individuals who
98 are psychologically thriving from those who are not.

99 We aligned with SDT by suggesting that autonomy, competence, and relatedness are
100 fundamental to human thriving and represent a psychological *need*, whereas, wealth and popularity
101 are psychological *desires* which are not fundamental to optimal functioning. As such, we
102 hypothesized that satisfaction of all five needs and desires would be related to positive consequences
103 (i.e., higher positive affect and subjective vitality, and lower negative affect) at the within-person
104 level. In contrast, only individual differences in the satisfaction of three SDT-based needs would be
105 related to positive psychological consequences. No individual difference relationships were expected
106 among satisfaction of the desires for popularity and wealth and psychological consequences.

107 Our hypotheses were less clear with regard to physical symptoms of ill-being (i.e., sleep
108 disturbance and frequency of headaches), given that previous research has offered mixed support for
109 the relationship between psychological need satisfaction, in particular relatedness, and poor somatic
110 health (e.g., Reis et al., 2000). Therefore, we proposed that at both levels of analysis low satisfaction
111 of autonomy and competence would be related to increased somatic symptoms of ill-health, whereas
112 unsatisfied desires (i.e., wealth and popularity) and relatedness would not.

113

2. Method

114 **2.1. Participants and Procedure**

115 Participants were 198 undergraduates aged between 19 and 30 years ($M = 19.82$, $SD =$
116 1.47 , 51% male) who were based in England. Forty students completed the inventory four times,
117 81 completed it three times, 54 completed it twice, and 23 completed it once. Following ethical
118 procedures, participants completed an inventory containing all study variables during the second,
119 third, fifth, eighth, and tenth week of a university semester (some participants were given the
120 questionnaire in different weeks).

121 **2.2. Measures (please see online supplement for example items)**

122 **2.2.1. Attainment of Psychological Needs and Desires** was measured by asking
123 participants to respond to the stem “during the past week, I felt” followed by 15 items (three
124 items for each need or desire) previously used and validated by Sheldon et al. (2001). All items
125 were responded to on a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*).

126 **2.2.2. Vitality** was measured using the validated seven item version of the Subjective
127 Vitality Scale (Ryan & Frederick, 1997). Participants read the stem “during the past week”
128 followed by the items and responded using a 7-point scale, anchored by 1 (*not at all true*) and 7
129 (*very true*).

130 **2.2.3. Positive and Negative Affect** was assessed using the previously validated Positive
131 And Negative Affect Scale (Watson, Clark, & Tellegen, 1988). Participants were asked to rate
132 how much they have experienced ten positive and ten negative emotions during the past week on
133 a 5-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*).

134 **2.2.4. Sleep Disturbance and Frequency of Headaches** were measured using the four
135 and three items that comprise the respective subscales of the Physical Health Questionnaire

136 (PHQ; Schat, Kelloway, & Desmarais, 2005). Participants were asked to consider the last week
137 and respond using a scale ranging from 1 (*not at all*) to 7 (*all the time*).

138 **3. Results**

139 All subscales demonstrated adequate internal consistency ($\alpha \geq .60$) and correlations
140 between the study variables suggested that multicollinearity was not an issue (specific details can
141 be found in the online supplement).

142 Using MLwin 2.10 software (Rasbash, Steele, Browne, & Goldstein, 2009), we estimated
143 level 1 (i.e., within-person) and level 2 (i.e., individual differences) relationships simultaneously.
144 All predictor variables were explored as random effects; however, they were entered as fixed
145 effects in the models if the level 2 slope variance was not significant or the deviance scores did
146 not indicate better model fit. To examine within-person relations the five psychological needs and
147 desires were group mean centered and entered as predictors in the level 1 equation of the
148 respective models. To examine individual difference relationships, participants' mean scores of
149 the five needs and desires were centered on the sample mean across all time points and entered
150 into the level 2 equation. To further investigate potential differences between individual
151 differences in need and desire attainment, we also constructed a series of models in which the
152 slope of one psychological need was constrained to be equal with the slope of one desire. If these
153 models showed worse fit to the data than an unconstrained model the respective slopes (i.e.,
154 relationships) were assumed to be different. Results can be seen in Table 1 and are summarized
155 for each outcome variable below.

156 **3.2.1. Vitality.** Increases in attainment of all the needs and desires beyond one's normal
157 levels were associated with greater vitality, with the exception of relatedness. Moreover,
158 participants who had their needs for competence, autonomy, and relatedness satisfied generally

159 reported higher vitality, compared to participants who did not have these needs satisfied. No
160 individual difference relationships were found for wealth and popularity. Comparison of
161 constrained and unconstrained models revealed that significant differences existed between the
162 level 2 slope coefficients of the needs and the desires (range of $\Delta\chi^2 = 4.12 - 11.14$, $df = 1$, all $p <$
163 $.05$), with the exception of relatedness and money ($\Delta\chi^2 = 3.06$, $df = 1$, $p > .05$).

164 **3.2.2. Positive affect.** Increases in attainment of competence, autonomy, and popularity
165 beyond one's normal levels were related to higher positive affect. The relationship between
166 competence and positive affect significantly varied across participants. In addition, participants
167 who had their needs for competence, autonomy, and relatedness satisfied generally reported
168 greater positive affect, compared to participants who did not have these needs satisfied. No
169 individual difference relationships were found for wealth and popularity. Comparison of
170 constrained and unconstrained models revealed that significant differences existed between the
171 level 2 slope coefficients of the needs and the desires (range of $\Delta\chi^2 = 4.93 - 10.36$, $df = 1$, all $p <$
172 $.05$), with the exception of relatedness and popularity ($\Delta\chi^2 = 2.08$, $df = 1$, $p > .05$).

173 **3.2.3. Negative affect.** Increases in attainment of the desires or needs were not associated
174 with negative affect, however, the relationships among increases in competence, relatedness and
175 negative affect varied significantly across participants. Further, participants who had their needs
176 for competence and autonomy satisfied generally reported feeling less negative affect, compared
177 to participants who did not have these needs satisfied. No individual difference effects were
178 found for relatedness, wealth, and popularity (however, the relationship between popularity and
179 negative affect varied across participants). Comparison of constrained and unconstrained models
180 revealed that significant differences existed between the level 2 slope coefficients of the two
181 significantly related needs (i.e., autonomy and competence. Relatedness was not tested as it did

182 not significantly predict negative affect) and the desires (range of $\Delta\chi^2 = 8.11 - 16.14$, $df = 1$, all p
183 $< .05$).

184 **3.2.4. Sleep disturbance.** Increases in attainment of competence and wealth above one's
185 normal levels were associated with less sleep disturbance. However, there were no significant
186 relationships between individual differences in the attainment of needs and desires and sleep
187 disturbance.

188 **3.2.5. Headaches.** Increases in attainment of the desires or needs were not associated with
189 frequency of headaches, however, the relationship between increases in popularity and headache
190 occurrence significantly varied across participants. Again, there were no significant relationships
191 between individual differences in the needs and desires and headache occurrence.

192 **4. Discussion**

193 Findings within the present study suggested that increased attainment beyond one's
194 normal levels in two of the three psychological needs advocated by SDT (i.e., autonomy and
195 competence), as well as popularity and wealth are associated with positive affective responses
196 and vitalized functioning. However, differences between SDT-based needs and acquisitive
197 desires were found at the individual difference level. Participants who satisfied their desire to be
198 wealthy and popular did not report enhanced well-being, compared to participants who were
199 unsatisfied. Contrastingly, individuals who felt autonomous, competent, and related reported
200 greater psychological health, compared to individuals with lower levels of psychological need
201 satisfaction. Results were less conclusive regarding indicators of ill-being.

202 Our results imply that an individual who experiences an increase in his or her
203 satisfaction of competence (e.g., feeling proficient at work after a successful project), autonomy
204 (e.g., having more time to participate in activities of one's choosing than normal), popularity

205 (e.g., a sudden increase in attention on social networking websites), and wealth (e.g., an
206 unexpected pay rise) is likely to function with more energy and vitality during these changes.
207 Further, greater feelings of competence, autonomy, and popularity compared to usual are likely to
208 be associated with higher positive affect. The immediate positive correlates associated with
209 elevated attainment of popularity and wealth may explain why these two desires are so sought
210 after (Bandura and Locke, 2003). Similarly, the proposition that increased agency and
211 effectiveness will correspond with energized functioning and increased positive affect has robust
212 support. In contrast to Reis et al. (2000), however, we did not find any significant relationships
213 between increases in the satisfaction of relatedness beyond one's normal levels and positive affect
214 or vitality. These equivocal findings imply that in certain contexts, fluctuations in relatedness
215 satisfaction may play a lesser role in healthy psychological functioning, compared to autonomy
216 and competence. As we discuss later, however, this isolation should not become the typical
217 experience for any given individual.

218 Limited support was established for our proposal that decreases in the satisfaction of
219 the psychological needs and acquisitive desires beyond one's normal levels would lead to higher
220 reported ill-being. Decreased feelings of competence and attainment of wealth compared to
221 normal were associated with disturbed sleep. Financial concerns have been shown to be a
222 significant potential stressor in undergraduate samples (Ross, Cleland, & MacLeod, 2006), which
223 may explain why a participant would experience troubled sleep if he or she does not feel as
224 financially satisfied as normal. Generally speaking, fluctuations in the SDT-based psychological
225 needs did not impact upon individuals' ill-being. We based this hypothesis on Deci and Ryan's
226 (2000) proposal that thwarting individuals' psychological needs will result in diminished
227 functioning, as well as work proposing more specific links (e.g., social isolation and reduced

228 sleep quality; Hawkey, Preacher, & Cacioppo, 2011). However, research has often found similar
229 non-significant relationships among psychological need satisfaction and indicators of ill-being
230 (e.g., Reis et al., 2000). Recent work by Bartholomew, Ntoumanis, Ryan, Bosch, & Thørgesen-
231 Ntoumani (2011) proposed that a lack of need satisfaction (i.e., what we measured in the present
232 study) is conceptually distinct from overt thwarting of psychological needs and this distinction
233 may explain why non-significant relationships between psychological need satisfaction and
234 maladaptive consequences are often found.

235 As expected, a clear distinction can be seen between psychological needs and desires
236 when examining individual differences in the fulfilment of these constructs and their associations
237 with well-being. Individuals who reported high satisfaction of the desire for wealth and
238 popularity did not report higher psychological well-being, compared to individuals who reported
239 low satisfaction. In contrast, participants whose psychological needs for autonomy, competence,
240 and relatedness are generally fulfilled in life reported greater psychological well-being, compared
241 to individuals who experience less psychological need gratification. These results were
242 supplemented by the finding that participants who reported lower autonomy and competence
243 satisfaction reported higher negative affect, compared to participants who reported greater felt
244 autonomy and competence. Thus, our results suggest that individuals who feel a sense of self-
245 initiation and effectiveness in their activities, as well as a connectedness with important others are
246 likely to experience a fulfilling life. Those individuals who gratify their need for status and riches
247 may not be guaranteed such a positive existence, despite some immediate benefits of attaining
248 social recognition and wealth beyond one's normal levels.

249 It is worth noting that, in some instances, the relationships associated with relatedness
250 need satisfaction were not found to be different than those of wealth and popularity attainment.

251 Based on our criteria, therefore, the proposal that relatedness need satisfaction is more important
252 than gratifying materialistic desires remains debatable. This challenges researchers to discover
253 why this might be the case, for example, experimentally manipulating actual need and desire
254 satisfaction, rather than relying on self-reported perceptions, might help to clarify the importance
255 of each need and desire for individuals' well- and being. Notwithstanding these equivocal
256 findings, although increases in participants' sense of relatedness satisfaction beyond one's normal
257 levels did not correspond to enhanced levels of well-being, individuals who were generally higher
258 in feelings of relatedness satisfaction reported more vitality and positive affect than their
259 unrelated counterparts. Thus, it seems that chronic satisfaction of relatedness has a key role in
260 psychological well-being, but fluctuations in relatedness may not be so impactful.

261 **4.1. Limitations, Future Directions and Conclusions**

262 Despite providing a detailed picture of the varying consequences of fulfilling
263 psychological needs and desires, it is worth noting that all the constructs were measured via self-
264 report in a relatively homogenous sample of Caucasian undergraduate students. Hence, the use of
265 alternative markers and samples is recommended. In addition, the analysis we employed cannot
266 provide information on the causal direction of relationships, particular at the individual difference
267 level where alternative trait variables may explain the relationships. Potential moderators of the
268 relationships examined in this study could also be scrutinized to help facilitate understanding of
269 why some of the relationships found varied across participants. Notwithstanding these limitations,
270 however, the study offers new insights into the varying potential consequences of fulfilling
271 psychological needs advocated within the SDT framework and acquisitive desires. In particular,
272 disentangling within-person and individual difference relationships seems to help distinguish

273 between needs and desires and their impact upon well-being and affective ill-being, but not
274 somatic ill-being.

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