1 Personality and motivational predictors of well-being and coping during COVID-19: A

2 reversal theory analysis

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42   Abstract

43   This study used reversal theory to examine motivational predictors of well-being and coping

44   during the COVID-19 pandemic in 2020. 149 UK based respondents completed an online

45   survey including measures of demographics, well-being, coping, motivational style, and

46   dominance. Well-being was predicted by optimism (positively), autic and mastery

47   (negatively) dominances, by alloic sympathy, optimism and paratelic motivation styles

48   (positively), and, negatively by arousal seeking, arousability and pessimism. Coping was

49   positively predicted by optimism and negativism dominances and by negativist, paratelic

50   and telic motivations, and, negatively by arousability and pessimism. Using motivational

51   dominances, indirect support was identified for the link between psychodiversity and well-

52   being, but not coping. Findings suggest that well-being and, to a lesser degree, coping could

53   be enhanced by encouraging individuals to experience a range of motivations, possibly

54   focusing on those identified here as significant predictors. Future research needs to

55   determine the context specificity of these findings and explore psychodiversity, well-being

56   and coping using both metamotivational states and composite profiles incorporating the full

57   range of motivational constructs.

58

59   Keywords: reversal theory, well-being, coping, personality, motivational dominance,

60   psychodiversity

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1. Introduction

The global pandemic caused by COVID-19 in March 2020 has currently (September, 2020) resulted in 25.8 million cases and 859,000 deaths, having changed and continuing to change people's lives. In the UK, people are experiencing months of national or local lockdown; at times being only permitted to leave their homes to meet essential needs. Thousands of people have lost their jobs and the gap between rich and poor has widened. School and workplace closures meant that children have been home-schooled by parents, and employees who can, have worked at home (e.g., see Hiscott et al., 2020).

Inevitably, people have experienced fear, loss, physical illness, anxiety, depression, stress, living with uncertainty, and loneliness, potentially with long-term consequences (Dubey et al., 2020; Qiu et al., 2020). Whilst the devastating impact of COVID-19 cannot be downplayed, there are benefits. For example, reduced global air pollution (Zambrano-Monserrate, Ruano, & Sanchez-Alcade, 2020), communities supporting the vulnerable, and home-working enabling more time with family and less work-related stress.

Not all individuals will respond in the same way to the same stressor (e.g., Lazarus & Folkman, 1984) and theories of personality suggest that individual difference factors can help explain this. There is ample evidence that personality is related to both well-being and coping (e.g., Carver & Connor-Smith, 2010; Diener, Oishi, & Lucas, 2003; Lucas, 2018) but insufficient scope to discuss this in detail here. Of note, however, Lucas (2018) highlights that individual differences are the most consistent and strongest predictor of subjective well-being, but this research has mainly focused on the Big Five Personality Dimensions (Costa & McCrae, 1992), predominantly extraversion and neuroticism. In addition, further evidence identifies that personality is related to different responses to acute laboratory-induced stress, societal transition (van den Burg & Pitariu, 2005; Xin et al., 2017), and is

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87   related to differences in coping approaches during incarceration (Leszko, Iwanski, &

88   Jarzebinska, 2020).

89   Given the potential stressful impact of COVID-19, enhancing our understanding of

90   people's well-being and coping in this context is important. Whilst research has explored

91   these relationships previously, in this study we did so using reversal theory (Apter, 2001). As

92   discussed below, personality characteristics described in reversal theory explain a range of

93   health-related factors but this does not yet include well-being or resilience coping, on which

94   this study focused.

95   1.1 Theoretical framework

96   Reversal theory (Apter, 2001) proposes metamotivational states (Apter, Mallows, &

97   Williams, 1998) that are structured into bipolar opposite pairs and each pair has a specific

98   underlying focus. The telic-paratelic pair is concerned with means and ends; in the telic

99   state we prefer serious, goal-oriented activities with important consequences. In the

100   paratelic state, we prefer playful activities with no long-term consequences and focus on

101   the current moment. The mastery-sympathy pair is focused on interactions with others. In a

102   mastery state, we want to feel powerful, in control and dominant, whereas in a sympathy

103   state we focus on caring, supporting and connecting. The negativist-conformist pair centres

104   on rules and norms and in the negativist state, we are motivated to oppose these and value

105   freedom and change. In the conformist state, we are motivated to maintain rules and norms

106   and focus on belonging through conforming. The autic-alloic pair is focused on relationships

107   and whether, in the autic state, we want to fulfil or own needs, or, in the alloic state, we

108   want to fulfil others' needs. We experience combinations of metamotivational states from

109   different pairs (e.g., alloic sympathy, when we are motivated to support and care for others)

110   but do not experience states from the same pair simultaneously (e.g., negativist and

111   conformist). We frequently reverse between states within each pair but prefer to spend

112   time in one state from each pair. This tendency is termed dominance and is how reversal

113   theory views personality, although not as a fixed, inherent trait, but as a disposition that is

114   open to modification. Reversal theory also proposes the importance of additional

115   motivational constructs. First, arousal avoidance and arousal seeking, where, respectively,

116   the individual seeks a peaceful state and avoids problems or challenges, or seeks intense

117   feelings and stimulation, including problems and challenges. Second, optimism and

118   pessimism, characterised, respectively, by hope that things will turn out positively, and an

119   expectation for things to turn out badly. Finally, arousability and effortfulness, described,

120   respectively, as a tendency to be easily emotionally aroused, and a tendency to apply

121   oneself to achieving goals even during difficulties.

122   Reversal theory (Apter, 2001) makes predictions about the relationship between

123   motivational constructs and well-being through its concept of psychodiversity.

124   Psychodiversity refers to the experience of multiple metamotivational states rather than

125   consistently experiencing the same metamotivational states. As each state contributes to

126   fulfilling different universal needs, failure to experience the full range of states is

127   detrimental to well-being. For instance, constantly striving to meet the achievement and

128   future-oriented needs of the telic state offers no opportunity to experience the playful

129   paratelic state, and, being stuck in specific states can result in negative emotions, such as

130   anxiety in the telic state, detrimentally affecting well-being and coping (Apter, 2013). Only

131   one study has so far supported psychodiversity and its link with indices of well-being (i.e.,

132   psychological need satisfaction; Thomas, Hudson, & Oliver, 2018). Lack of psychodiversity is

133   characterised by inflexibility of motivational experience. We propose that individuals who

134   demonstrate extreme dominance in multiple motivational states, and as a result are likely to

135 more consistently remain in their preferred motivational states, will report lower well-being

136 than individuals who demonstrate no extreme dominances. Thus we carried out an indirect

137 test of psychodiversity based on extreme dominance (see Kuroda, Hudson, & Thatcher,

138 2015).

139   1.2 Reversal theory research on personality and health-related outcomes

140   Research has identified links between motivational style and dominance and various

141 health-related variables, including stress responses, exercise, drug use, risky sexual

142 activities, use of energy drinks, eating pathology, and social and emotional need fulfilment.

143 Table 1 presents a summary of this research, that only one (Lustig & Cramer, 2015) has

144 indirectly measured well-being and in a specific context. Thus there is a need for studies

145 that explore the use of reversal theory for advancing understanding of the links between

146 personality, well-being and coping. The present research is the first study to examine the

147 role of reversal theory motivational constructs (Apter, 2001) for predicting well-being and

148 coping during a global crisis.

149
150 Table 1

151 Summary of reversal theory research examining predictors of health-related outcomes

152

Authors and date	Participants and context	Health-related outcomes	Findings
Kuroda, Thatcher, and Thatcher (2011)	Telic and paratelic dominant individuals performing leg extension exercise	Stress, indicated by tension in passive muscle during exercise	Telic dominant individuals displayed muscle tension in passive muscle during stressful exercise conditions. No tension was observed in paratelic dominant individuals.
Boddington and McDermott (2012)	Undergraduate students	Resistance to health messages about cannabis use	Resistance was positively predicted by rebelliousness (negativism) and negatively predicted by autic mastery.
Lafreniere, Menna, and	Older adolescents	Illicit drug use and risky sexual activities	Proactive rebelliousness (a form of negativism) was positively related to illicit drug use and risky sexual activities.

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Cramer (2013)			
Segatto and Lafreniere (2013)	High and low frequency exercisers	Exercise frequency	Paratelic dominance higher in high frequency exercisers compared with low frequency exercisers.
Ianni and Lafreniere (2014)	University students	Energy drink use	Negativism was positively related to an inability to stop using energy drinks.
O'Neill and Lafreniere (2014)	University students	Eating pathology	Autic sympathy was positively related to eating pathology in females.
Lustig and Cramer (2015)	Pet owners	Social, practical and emotional need fulfilment from pet ownership	Arousal avoidance and telic dominances predicted social and emotional need fulfilment. Alloic mastery predicted practical and emotional need fulfilment. Effortfulness predicted practical and emotional need fulfilment. Optimism, negativism, arousal avoidance and alloic sympathy predictors of all three types of need fulfilment.
Rahman, Hudson, and Flint (2018)	Male and female exercisers	Exercise length, type and consistency	Exercise length was positively predicted by mastery dominance in males and negatively by autic dominance in both males and females. Exercise type was positively predicted by telic and autic dominance in males and by autic dominance in females. Mastery and negativist dominance negatively predicted exercise type in females. Exercise consistency was negatively predicted by negativist dominance in males and females and positively by telic dominance in females.

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1.1.   Hypotheses

Our hypotheses were:

(1) well-being will be positively predicted by telic, conformist, alloic, sympathy, optimism,

and arousal avoidance dominances;

(2) well-being will be positively predicted by telic, conformist, alloic sympathy, optimistic,

effortfulness, and, arousal avoiding motivational styles, and, will be negatively predicted by

arousability;

(3) coping will be positively predicted by paratelic, negativistic, autic, mastery, optimism,

and, arousal seeking dominances;

163   (4) coping will be positively predicted by paratelic, negativist, autic mastery, optimism, and,

164   arousal seeking motivational styles, and, negatively predicted by effortfulness and

165   arousability, and,

166   (5) well-being and coping will be significantly higher in individuals with no extreme

167   dominances than those with multiple extreme dominances.

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169   *2.*   Materials and Methods

170   2.1 Participants

171   Participants were 149 individuals residing in the UK, aged 16 to 79 years, including

172   89 females and 58 males (2 non-responses). At the time of responding, the majority had not

173   contracted COVID-19 (n = 140), nor had anyone in their household (n = 135), were currently

174   working from home (n = 104), lived in households of 2-4 people (n = 123), without school-

175   aged children (n = 106), and were not home-schooling children (n = 112).

176   2.2 Procedures

177   The College Research Ethics Committee granted study approval and the research

178   adhered to the British Psychological Society ethical principles. Participants were recruited

179   via email and social media campaigns during May/June 2020 which was a period of

180   lockdown in the UK. The invitation email included a link to the survey which provided an

181   information sheet requiring informed consent prior to completing the online survey,

182   described below.

183

184   2.3 Measures

185   *Demographic* details included: age group, sex, household size, number of school-

186   aged children living at home and the number being home-schooled, occupational status,

187   personal and household COVID-19 status.

188

189   *Personality* was assessed using the Motivational Style Profile (MSP; Apter, Mallows, &

190   Williams,1998) which measures metamotivational dominance and charcteristics using 70

191   items. Respondents provide responses using a 6-point Likert type scale, anchored by *1 =*

192   *Never* and *6 = Always.* Its 14 subscales each comprise 5 items and measure the following

193   motivational characteristics: telic, paratelic, negativism, conformity, arousal avoiding,

194   arousal seeking, autic mastery, autic sympathy, alloic mastery, alloic sympathy, optimism,

195   arousability, and effortfulness. Metamotivational dominance scores are calculated for telic,

196   negativism, optimism, arousal avoidance, autic, and mastery dominance. Thus an

197   individual's motivational profile indicates their motivational styles (e.g., high in telic, low in

198   conformity etc.) and their degree of motivational dominance (e.g., telic dominant). The MSP

199   has acceptable face, construct and concurrent validity, test-retest reliability, and internal

200   consistency (e.g., Cronbach's alpha and test-retest correlations ranging from 0.7 to 0.9;

201   ibid).

202

203   *Coping* was conceptualised as the tendency to respond to stress in a highly adaptive

204   manner, with tenacity, creativity, optimism, an aggressive approach to problem solving, and

205   gaining personal growth from experienced problems, in line with the definition adopted in

206   the Brief Resilient Coping Scale (Sinclair & Wallston, 2004), our measure of coping.

207   Therefore coping was assessed using the Brief Resilient Coping Scale, including four items

208   capturing tendencies to cope with stress in a highly adaptive manner, using a 5-point Likert

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209 type scale, anchored with *1 = Does not describe me at all* to *5 = Describes me very well*.

210 Sinclair and Wallston (2004) demonstrated sound psychometric properties: internal

211 consistency (*r* = .76), test-retest reliability (*r* = .71) and convergent validity was supported by

212 expected correlations with personal coping resources (e.g., optimism), pain coping

213 behaviours, and psychological well-being.

214

215 *Well-being* Our conceptualisation of well-being was adopted from that used in our measure,

216 the Warwick-Edinburgh Mental Well-Being Scale (NHS Scotland, Universities of Warwick and

217 Edinburgh, 2006). Namely, that well-being incorporates subjective experience of affect and

218 life satisfaction, positive psychological functioning, relationships with others, and self-

219 realisation. Therefore well-being was assessed using the Warwick-Edinburgh Mental Well-

220 Being Scale (NHS Scotland, Universities of Warwick and Edinburgh, 2006). Participants use a

221 5-point Likert type scale anchored with *1 = None of the time* to *5 = All of the time* to respond

222 to 14 items describing thoughts and feelings over the preceding two weeks. The measure

223 has good psychometric properties: internal consistency (Cronbach's alpha = 0.89) and test-

224 retest reliability (intra-class correlation = 0.83).

225

226 2.4 Data Analysis

227 Shapiro-Wilks tests indicated that only the following variables were normally

228 distributed: well-being, telic, arousal avoidance, conformist, autic mastery, arousability, telic

229 dominance, arousal avoidance dominance, and autic dominance. Pearsons and Spearmans

230 Rank correlation coefficients were calculated for normally and non-normally distributed

231 variables, respectively.

232   Regression analyses using proc Stepwise in SAS at 0.1 to be included were conducted

233   separately for each set of predictor variables and each dependent variable to identify if

234   motivational characteristics and dominance scores predicted well-being and coping.

235   Linearity, multicollinearity, homoscedasticity, and multivariate normality assumptions were

236   met in all analyses.

237   We calculated the mean dominance score for each motivational pair, and

238   participants were identified as dominant in one of the two motivational characteristics if

239   they scored either more than 1 standard deviation above the mean, or less than 1 standard

240   deviation below the mean (as used previously; Kuroda, Hudson, & Thatcher, 2015). Table 2

241   presents descriptive data and thresholds used to define dominance groups. We then

242   identified the number of dominance groups each participant belonged to (range: 0 to 6) and

243   used an independent *t*-test to compare well-being in participants who belonged to 0

244   dominance groups with those who belonged to 4 or 5 dominance groups (none belonged to

245   6, and only 3 participants belonged to 5 therefore we combined them with the 4

246   dominances group; 1 outlier for well-being was removed). To compare groups on coping, we

247   used a Wilcoxon Two-Sample Test.

248   Table 2

249   Categorisation thresholds for dominance groups

Metamotivational pair	Mean	SD	Upper threshold	Lower threshold
Telic - Paratelic	4.57	5.12	≥9.69 (TD; n = 26)	≤ -0.55 (PD; n = 21)
Negativist - Conformist	-9.07	6.13	≥-2.94 (ND; n = 24)	≤ -15.20 (CD; n = 19)
Optimist - Pessimist	7.09	8.24	≥ 15.33 (OD; n = 22)	≤-1.15 (PED; n = 23)
Arousalavoid - Arousalseek	2.81	6.23	≥ 9.05 (AAD; n = 22)	≤-3.42 (ASD; n = 23)
Mastery - Sympathy	0.07	3.89	≥ 3.96 (MD; n = 24)	≤-3.82 (SD; n = 22)
Autic - Alloic	-4.79	3.90	≥ -0.89 (AUD; n = 20)	≤-8.69 (ALD; n = 21)

TD = Telic dominant; PD = Paratelic dominant; ND = Negativist dominant; CD = Conformist dominant; OD = Optimism dominant; PED = Pessimism dominant; AAD = Arousal avoidance dominant; ASD = Arousal seeking dominant; MD = Mastery dominant; SD = Sympathy dominant; AUD = Autic dominant; ALD = Alloic dominant

250

251   *3.* Results

252   As shown in Table 3, and according to Ursachi, Horodnic, and Zait (2015), most measures

253   have at least acceptable reliability (Cronbach's α = 0.6-0.7) whilst some demonstrate very

254   good reliability ($\alpha \geq 0.80$).

255   Table 3

256   Descriptive data for motivational, well-being and coping measures

Variable	N	Mean	SD	Cronbach's alpha
Telic*	147	22.78	3.98	0.77
Paratelic*	147	18.21	3.53	0.67
Arousal avoiding	147	20.46	3.79	0.64
Arousal seeking*	147	17.64	4.22	0.78
Negativism	147	11.69	3.50	0.66
Conformity*	147	20.76	3.95	0.69
Autic mastery*	147	19.23	3.97	0.67
Autic sympathy	147	18.47	4.76	0.74
Alloic mastery	147	23.36	3.88	0.88
Alloic sympathy	146	23.99	3.75	0.80
Optimism*	147	20.62	4.19	0.77
Pessimism	146	13.54	4.97	0.85
Arousability	147	18.44	5.06	0.85
Effortfulness	147	23.60	4.15	0.87
Wellbeing*	146	47.22	9.58	0.92
Coping	146	14.72	2.74	0.61
Telic dominance*	147	4.57	5.12	
Optimism dominance	146	7.09	8.24	
Negativism dominance	147	-9.07	6.13	
Autic dominance*	146	-4.79	3.90	
Mastery dominance	146	0.07	3.89	
Arousal avoidance dominance*	147	2.81	6.23	

257

258   3.1 Motivational Characteristics, Well-being and Coping

259   Well-being was significantly, albeit not strongly, correlated with all motivational

260   characteristics apart from arousal avoidance, negativism, conformity, autic mastery and

261   autic sympathy. Similarly, small but significant correlations were evident between coping

262   and all motivational characteristics apart from conformity, alloic mastery, alloic sympathy,

263   and arousal avoidance (see Table 4).

264   Table 4

265   Correlations between wellbeing, coping and motivational characteristics and dominances; (n

266   for Wellbeing, n for Coping); *$p < 0.05$, *$p < 0.01$.

Motivational Construct	Wellbeing	Coping
Telic (145, 146)	0.20*	0.21*
Paratelic (146, 146)	0.36**	0.29**
Arousal avoiding (146, 146)	-0.13	-0.13
Arousal seeking (146, 146)	0.22*	0.25**
Negativism (146, 146)	0.10	0.31**
Conformity (146, 146)	-0.07	-0.07
Autic mastery (146, 146)	0.14	0.20*
Autic sympathy (146, 146)	-0.14	-0.17*
Alloic mastery (146, 146)	0.17*	0.13
Alloic sympathy (146, 145)	0.21*	0.02
Optimism (145, 146)	0.65**	0.37**
Pessimism (146, 145)	-0.59**	-0.37**
Arousability (145, 146)	-0.34**	-0.28**
Effortfulness (146, 146)	0.18*	0.17*
Telic dominance (146, 146)	-0.10	-0.07
Optimism dominance (146, 146)	0.68**	0.41**
Negativism dominance (146, 146)	0.12	0.21*
Autic dominance (145, 145)	-0.19*	-0.07
Mastery dominance (146, 145)	0.20*	0.22*
Arousal avoidance dominance (145, 146)	-0.22**	-0.23**

267

268   Regression indicated that 6 of the 14 motivational characteristics significantly

269   predicted well-being, accounting for 58% of the variance (Model $R^2 = 0.55$; $F(6, 138) = 31.85$,

270    $p < 0.01$), the majority of which was predicted by optimism (44%). Paratelic, alloic sympathy

271 and optimism were positive predictors and, arousal seeking, arousability and pessimism

272 were negative predictors (see Table 5).

273   Five motivational characteristics significantly predicted coping, accounting for 33% of

274 the variance (Model $R^2 = 0.33$; $F(5, 139) = 5.83$, $p < 0.01$), with 17% predicted by pessimism.

275 Telic, paratelic and negativism positively predicted coping, and, pessimism and arousability

276 were negative predictors (see Table 5).

277

278   3.2 Motivational Dominance, Well-being and Coping

279   Apart from telic, mastery and negativist dominances, the remainder shared

280 significant relationships with well-being, displaying low to medium correlations. Coping was

281 not related to autic and telic dominance but shared small, significant relationships with all

282 other dominances.

283   Optimism, mastery and autic dominance were significant predictors of well-being,

284 accounting for 53% of its variance (Model $R^2 = 0.53$; $F(3, 141) = 53.79$, $p < 0.01$), mostly

285 predicted by optimism dominance (50%). Optimism dominance was a positive predictor,

286 and mastery and autic dominances were negative predictors of well-being, although

287 mastery did not independently add to the variance in well-being (see Table 5). Coping was

288 positively predicted by optimism and negativist dominance, accounting for 22% of its

289 variability (Model $R^2 = 0.22$; $F(2, 142) = 19.45$, $p < 0.01$; see Table 5) with the majority

290 predicted by optimism dominance (19%).

291   Well-being was significantly higher in participants belonging to 0 dominance groups

292 (n = 25) than those belonging to 4 or 5 dominance groups (n = 16): $t(18.12) = 2.12$, $p = 0.048$.

293 The former group mean was 49.84 ± 6.11 and the latter was 41.44 ± 15.09. Coping did not

294   differ between the 0 (n = 32) and 4/5 dominances (n = 21) groups: Z = -0.40, p > 0.05 (mean

295   = 14.38 ± 2.23 and 14.20 ± 3.53, respectively).

296

297   Table 5

298   Motivational characteristics and dominances that significantly predict well-being and coping

	Significant predictors	Partial R	R^2	β	F	Significance
Motivational characteristics predicting well-being	Optimism	0.44	0.44	0.97	26.76	0.00
	Pessimism	0.06	0.51	-0.52	10.48	0.00
	Alloic sympathy	0.03	0.54	0.58	13.76	0.00
	Arousability	0.02	0.56	-0.36	7.37	0.01
	Arousal Seeking	0.01	0.57	-0.37	5.86	0.02
	Paratelic	0.01	0.58	0.38	4.16	0.04
Motivational characteristics predicting coping	Pessimism	0.17	0.17	-0.15	10.19	0.00
	Negativism	0.08	0.24	0.17	7.73	0.01
	Telic	0.04	0.29	0.14	7.78	0.01
	Arousability	0.02	0.31	-0.10	5.05	0.03
	Paratelic	0.02	0.33	0.14	4.65	0.03
Motivational dominance predicting well-being	Optimism dominance	0.50	0.50	0.85	147.99	0.00
	Autic dominance	0.03	0.52	-0.42	8.90	0.00
	Mastery dominance	0.01	0.53	-0.26	3.05	0.08
Motivational dominance predicting coping	Optimism dominance	0.19	0.19	0.14	30.61	0.05
	Negativism dominance	0.02	0.22	0.07	3.9	0.00

299

300   *4.* Discussion

301   This study explored the value of motivational constructs described in reversal theory (Apter,

302   2013) for predicting well-being and coping during a global health crisis when people's

303   lifestyles, work and social contexts were severely disrupted.

304   4.1 Major findings and interpretations

305   Findings lent partial support for hypothesis one, as well-being was significantly

306   predicted by optimism (positively), mastery and autic (negatively) dominances, but, contrary

307   to our hypothesis, not by telic, conformist, and arousal avoidance dominances. There was

308 greater support for hypothesis two as well-being was positively predicted by alloic sympathy

309 and optimism, and, negatively by arousal seeking, arousability and pessimism. However,

310 conformity and effortfulness did not predict well-being, and, contrary to expectations,

311 paratelic motivation positively predicted well-being.

312   Similar levels of support were identified for hypotheses three and four. Coping was

313 significantly positively predicted by negativist and optimism dominances but, contrary to

314 hypothesis three, not by paratelic, autic, mastery and arousal seeking dominances.

315 Supporting hypothesis 4, paratelic and negativist motivations positively predicted, and

316 arousability and negatively predicted, coping. Whilst optimism did not positively predict

317 coping as hypothesised, pessimism was a negative predictor. Contrary to our hypothesis,

318 autic mastery, arousal seeking and effortfulness did not predict coping, whereas telic

319 motivation was a positive predictor. Hypothesis five garnered mixed support; well-being

320 was significantly lower in people belonging to multiple dominance groups, than those who

321 did not belong to an extreme dominance group, but no differences were observed in coping.

322   Explaining these findings, optimism is consistently related to higher levels of well-

323 being, hope, physical well-being, and coping with stress, mainly through the use of social

324 support (Conversano et al., 2010). Thus pessimism, was, logically negatively related to well-

325 being. The Covid-19 pandemic has caused a change in lifestyle for many, and opportunities

326 for variety, excitement and elevated arousal are diminished. This helps explain the link

327 between low arousal seeking and well-being. Similarly, the situation requires a collective

328 effort, where personal needs are not always foremost, and people are spending increased

329 time with a small group of people. Thus, it makes sense that higher alloic sympathy and

330 lower autic and mastery dominance were associated with higher well-being. Not

331 surprisingly, in such a volatile, emotion provoking, and possibly adverse situation, a lesser

332 tendency to be easily emotionally aroused, appears helpful for well-being. We postulated

333 that telic motivation would be associated with higher well-being as the current situation

334 requires a focus on long-term goals with actions viewed as a means to an end (e.g., isolating

335 to prevent infecting others). However, paratelic motivation was associated with higher well-

336 being, suggesting that enjoying the moment for its own sake without need to focus on

337 purposeful activities with long-term consequences, was associated with higher well-being.

338 On reflection this makes sense, as the pandemic has affected the capacity to plan and

339 engage in some purposeful activities (e.g, work, competitions, volunteering). This also

340 provides a potential explanation for the finding that effortfulness, telic and arousal avoiding

341 dominances did not predict well-being, although this was hypothesised. The lack of

342 predictive power of conformity is at first surprising given that the situation required strict

343 adherence to rules. Possibly though this in fact rendered conformity irrelevant as everyone

344 was compelled to conform, regardless of their degree of conformity.

345   Although not all predictors of coping were supported, optimism (and by extension

346 pessimism) negativism, paratelic motivation and low arousability significantly predicted

347 coping as hypothesised. Optimism is needed to approach problems positively and is

348 associated with adaptive coping (Sinclair & Wallston, 2004), and low arousability will likely

349 enable the cognitive processing needed for tenaciously approaching problems with adaptive

350 coping. This latter relationship possibly helps to explain the lack of support for arousal

351 seeking as a predictor of coping, although this contradicts our hypothesis. Resilience coping

352 also involves creatively addressing problems (ibid) therefore it is logical that higher levels of

353 coping are associated with greater negativism, a willingness to deviate from norms and

354 conventions and with higher levels of paratelic motivation and a willingness to be

355 spontaneous. This does not, however, correspond with the finding that paratelic dominance

356   was not a significant predictor. Considering the focus on personal agency in our measure of

357   resilience coping, it is surprising that effortfulness, autic and mastery motivations and

358   dominances did not predict coping. Possibly this could be because of the lack of personal

359   control and agency presented by the pandemic, and therefore under normal circumstances,

360   this relationship would be evident. It is clear that future studies are needed when the

361   pandemic has ended to enable us to discern if the findings here are upheld in normal

362   circumstances or if a different pattern of relationships is identified.

363   Higher levels of well-being observed in people with no extreme dominances

364   compared with those with multiple extreme dominances suggest indirect support for the

365   link between psychodiversity and well-being, adding to initial evidence (Thomas et al.,

366   2018). Based on this, examining dominances independently from each other, as in the

367   present study, might not provide a full account of their influence. Instead, our data suggest

368   the need to use a composite profile of dominances, as Apter et al. (1998) suggest. Although

369   Apter (2013) suggests that psychodiversity is associated with enhanced coping in a dynamic

370   environment, coping did not differ in relation to number of dominance group affiliations.

371   Tentatively, we suggest that experiencing different states helps to maintain well-being but

372   not coping because the pandemic was under mass, not personal control. Future research

373   that untangles these issues would appear to be important.

374   Results from this study support established relationships that personality shares with

375   wellbeing and coping (e.g., Carver & Connor-Smith, 2010; Lucas, 2018) and illustrate that

376   looking beyond the Big Five Personality Dimensions (Costa & McCrae, 1992) might further

377   elucidate personality factors that are related to these variables. Importantly, as reversal

378   theory proposes that dominances are tendencies rather than traits, and that all individuals

379   can spend time in all metamotivational states, regardless of whether or not they are aligned

380   with their own dominances, means that people can be encouraged to spend time in states

381   that are most associated with enhanced well-being and coping.

382   Direct comparison with previous research using reversal theory is limited as this

383   research focused on specific health-related behaviours and cognitions whereas we focused

384   on general well-being and coping. In addition, previous work has not always considered the

385   full range of motivational styles and dominances, unlike our study. Regardless, our findings

386   extend existing research supporting the role of reversal theory (Apter, 2001) constructs in

387   predicting important health-related variables (e.g., Boddington & McDermott, 2012; Ianni &

388   Lefreniere, 2014; Lafreniere, Menna, & Cramer, 2013; Lustig & Cramer, 2015; O'Neill &

389   Lafreniere, 2014; Rahman et al., 2018; Segatto & Lafreniere, 2014). Our data tentatively

390   indicate that motivational styles might be more influential predictors than motivational

391   dominances, which also appeared to be the case in Lustig and Cramer's (2015) study, as only

392   telic and arousal avoidance dominances were significant predictors. Although within

393   different contexts, the outcomes of both studies are well-being oriented, thus future

394   research is needed to identify if this phenomenon is replicated.

395   *5.* Conclusion

396   Our findings indicate that the motivational constructs proposed within reversal

397   theory's structural phenomenological framework are useful for predicting well-being, and,

398   to a lesser degree, coping. To optimise well-being, in line with the concept of

399   psychodiversity, we should encourage the experience of a wide range of motivational

400   states. Those people with extreme dominances, who are likely to spend the majority of their

401   time in preferred motivational states, thus might benefit from actively inducing reversals to

402   their non-preferred states. Recently, authors have discussed the feasibility of self-induced

403   reversals (e.g., Apter, 2013; Thomas et al., 2018) including methods to do so (Desselles &

404   Apter, 2013) such as the threat of performance evaluation and imagery (e.g., Legrand &

405   Thatcher, 2011; Hudson & Day, 2012). However, more research is needed across the whole

406   range of motivational states, to illustrate their efficacy.

407   Within the context of a shared global crisis, people reporting higher well-being

408   displayed the following motivational profile: paratelic, optimistic, alloic sympathy, low

409   arousability, pessimism and low arousal seeking, with optimism and alloic sympathy

410   dominance. Those reporting optimism and negativist dominance, high negativist, paratelic

411   and telic motivations, and low arousability and pessimism displayed higher levels of

412   resilience coping. These motivational profiles support their adaptive value for well-being

413   and coping in such a situation, thus we might suggest encouraging their experience in

414   similar situations.

415   5.1   Study strengths, limitations and future research

416   This study was conducted within a specific crisis, included only a UK based sample

417   with internet access. Thus, future research should explore whether these findings are

418   replicated and can be generalised to other samples, adverse contexts and to non-adverse

419   situations. Also, as our study was correlational, we cannot state with certainty that

420   encouraging these motivational experiences will lead to enhanced well-being and coping;

421   longitudinal studies are required to explore this. If confirmed, studies need to establish if

422   interventions that manipulate motivational states do lead to enhanced well-being and

423   coping. In addition, this study used a proxy measure of psychodiversity, thus, to further

424   advance theory, future research needs to measure metamotivational states. Nevertheless,

425   by predicting well-being and coping using reversal theory motivational constructs (Apter,

426   2001), this study makes a novel contribution and extends the line of inquiry beyond the Big

427   Five Personality Dimensions (Costa & McCrae, 1992).

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