Title: Positive Schizotypy and the Experience of Creativity: The Distinctive Roles of Suspiciousness and Dispositional Mindfulness

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Abstract

Positive schizotypy has been shown to predict emergence of schizophrenia-spectrum disorders, with suspiciousness/paranoia regarded a key risk factor. However, magical thinking and unusual perceptual experiences, other aspects of positive schizotypy, are associated with creativity. We investigated whether suspiciousness attenuates the relationship of magical thinking and unusual experiences with creativity experience, and explored the interaction of dispositional mindfulness with positive schizotypy and creative experience. 342 (256 females) healthy adults (mean age: 25.9; SD 8.4) completed online self-report measures of schizotypy, creative experience, and dispositional mindfulness. Moderation analysis showed that suspiciousness attenuated the positive relationship of magical thinking (b = -.29, p = .03) and unusual perceptual experiences (b = -.23, p = .01) with an aspect of creative experience related to positive affect – power/pleasure. This effect was not present for 4 other aspects of creative experience. Multiple linear regressions revealed higher dispositional mindfulness to interact with aspects of positive schizotypy associated with heightened creative experience of power/pleasure (b = .06, p =.03), clarity/preparation (b = .03, p =.004), and differing levels of anxiety associate with creative engagement (b = -.06, p = .003; b = .03, p = .047). Higher dispositional mindfulness was also associated with lower suspiciousness (r_s = -.33, p <.001). The study highlights the importance of considering the role of suspiciousness/paranoia when investigating the relationship between positive schizotypy and creativity. The findings provide support for the application of mindfulness-based interventions for mitigating psychosis-risk associated with suspiciousness, whilst supporting the otherwise favourable association of positive schizotypy with creativity.

Keywords: schizotypy; schizophrenia; psychosis; paranoia; dispositional mindfulness; creativity

1. Introduction

Schizotypy refers to a set of personality traits found in the general population, with most evidence supporting a three-factor structure corresponding to symptom dimensions of schizophrenia: positive, negative, and disorganised (Mason et al., 1997; Nelson et al., 2013). Schizotypy shows a substantial overlap with schizophrenia across multiple cognitive, behavioural, and neurobiological domains (Ettinger et al., 2014), reflecting a latent predisposition to schizophrenia (Lenzenweger, 2015); however, schizotypal traits can also exist as a normative aspect of personality and do not invariably lead to schizophrenia-spectrum disorders.

Positive schizotypy in particular is thought to predict later emergence of schizophrenia-spectrum disorders (Debbané et al., 2015; Kwapil et al., 2013), with suspiciousness/paranoia – an aspect of positive schizotypy - being a key risk-factor to psychosis conversion (Wilcox et al., 2014), especially in high-risk individuals (Salokangas et al., 2013). However, another side of the coin of positive schizotypy is the association with heightened creativity – a highly beneficial trait, for both an individual and society. A range of approaches have been used to investigate this link, including assessing self-rated creative achievement (e.g. Polner et al., 2015), self-rated creative ability/behaviour (e.g. Batey & Furnham, 2008), holding a creative profession (e.g., Nettle & Clegg, 2006), or assessing creativity using objective tests (e.g., Fink et al., 2014; Rawlings & Locarnini, 2008). Whilst some studies have reported a link between creativity and positive schizotypy (for a meta-analysis, see Acar & Sen, 2013), others have not observed it when using the same assessments of schizotypy and creativity (e.g., Michalica & Hunt, 2013; Rybakowski & Klonowska, 2011).

The most widely used self-report measures of positive schizotypy in creativity research are the Oxford-Liverpool Inventory for Feelings and Experiences (O-LIFE; Mason et al., 1995) and the Schizotypal Personality Questionnaire (SPQ; Raine, 1991). Both encapsulate magical thinking and unusual perceptual experiences as aspects of positive schizotypy; however, only the SPQ has a subscale measuring suspiciousness/paranoia (referred to as *Suspiciousness* or *Suspiciousness/Paranoid Ideations*, Raine 1991). Studies using the SPQ tend to consider positive schizotypy overall, rather than examining separate sub-scales (e.g., Fink et al., 2014; Gibson et al., 2009; Rominger et al., 2014). However, suspiciousness/paranoia may overlap with negative schizotypy (Raine et al., 1994; Kwapil et al., 2013), a dimension which may have differing or even inverse relationship with creativity (Acar & Sen, 2013). Further,

paranoia is predicted by cognitive inflexibility (Freeman et al., 2008) - contrary to what is conducive to creativity (Nijstad et al., 2010). It is therefore possible that suspiciousness/paranoia could have an attenuating effect on the relationship between creativity and the aspects of positive schizotypy which have been previously linked to heightened creativity (namely magical thinking and unusual experiences), confounding results of previous research. Given that a larger proportion of the studies using the SPQ/SPQ-brief version (Raine & Benishay, 1995) have reported negative findings on the positive schizotypy and creativity relationship than those using O-LIFE (with a larger number of studies to use O-LIFE overall), an investigation of the role of suspiciousness/paranoia in the relationship between positive schizotypy and creativity is warranted.

Understanding the role of suspiciousness/paranoia in the relationship between positive schizotypy and creativity might have a direct bearing on psychosis prevention strategies. Our recent research suggests that training in mindfulness, a present-moment receptive awareness promoting openness, non-judgement and non-reactivity towards experience (Bishop et al., 2004), might contribute to prevention. We have found that experienced mindfulness meditators score higher on *Magical Thinking* but lower on *Suspiciousness* subscales of the SPQ than the general population (Antonova et al., 2016), showing a dissociation between the aspects of positive schizotypy associated with creativity and psychosis risk, respectively. Moreover, experienced meditators show attenuated sensory filtering as compared with healthy controls (Antonova et al., 2015), a sensory information processing feature linked to higher real-world creative achievement (Zabelina et al, 2015). Together, these findings suggest that mindfulness might be protective against the aspects of positive schizotypy that present high risk for psychosis, namely suspiciousness/paranoia, in the presence of factors associated with heightened creative ability such as magical thinking and attenuated sensory information filtering. A one-week mindfulness-based intervention was found to reduce paranoia in university students (Kingston et al., 2019), confirming that paranoia is amenable to mindfulness training.

Whilst mindfulness can be developed as a skill through practices such as meditation, it has also been shown to be a normally distributed personality trait (Baer et al., 2006). It is, therefore, plausible that dispositional mindfulness might have a differential relationship with the aspects of positive schizotypy, specifically magical thinking and suspiciousness/paranoia, and thus impact the relationship between different aspects of positive schizotypy and creativity. However, the inter-relationship between positive schizotypy, creativity and

dispositional mindfulness is presently unknown, whilst being needed to inform and provide impetus for future research into using mindfulness training for psychosis prevention in individuals at risk.

Based on the previous research and above considerations, the main aims of the present study were novel and two-fold: i) to investigate whether the relationship between the aspects of positive schizotypy previously linked to heightened creativity – specifically, magical thinking and unusual experiences - and creative experience is attenuated by suspiciousness/paranoia; and ii) to explore whether dispositional mindfulness interacts differentially with different aspects of positive schizotypy (magical thinking and unusual experiences vs suspiciousness/paranoia) in their relationship with creative experience.

2. Methods

2.1. Participants

Three-hundred and forty-two (256 females; 84 males; 2 did not disclose) healthy volunteers aged 18-65 (mean age 25.9 years; SD = 8.4, range: 18-61) were recruited via London-based universities, creative Facebook groups and local forums. Participants were asked to confirm (via checkbox in the survey) that they met the following inclusion criteria: i) fluency in English; ii) no history or current diagnosis of a mental illness, neurodevelopmental or neurological disorders (as diagnosed by a professional health practitioner, neurologist, psychiatrist or psychologist), or iii) no history of or current substance abuse.

2.2. Design and Procedures

A cross-sectional online survey was conducted using via '*Bristol Online Surveys'* platform. The study was advertised as '*Investigating the relationship between creativity, mindfulness and personality traits*' to circumvent stigma associated with the term *schizotypy* due to its association with psychopathology. Completion of the survey constituted consent for study participation and £5 Amazon vouchers were given as remuneration.

The study was approved by the King's College London Research Ethics Committee (LRS-17/18-5604).

2.3. Self-report measures

For the description of self-report measures and example items see Table A.1 of the Supplementary Materials. The demographics section of the survey included items sampling participants' age, gender, and educational level (as indicated by highest achieved or current diploma/degree). Participants were also asked to indicate whether they currently engaged in regular creative activity (whether through study, profession, or hobby).

Schizotypy: The Schizotypal Personality Questionnaire (SPQ; Raine, 1991) was used to quantify schizotypal traits. The SPQ has 74 items constituting nine subscales capturing features of schizotypal personality, modelled on the *Diagnostic and Statistical Manual of Mental Disorders* (rev. 3rd ed.; *DSM-III-R*; American Psychiatric Association, 1987) for schizotypal personality disorder. The SPQ captures three symptom dimensions of schizophrenia: positive, negative and disorganised. Positive dimension subscales include: *Odd Beliefs/Magical Thinking, Unusual Perceptual Experiences, Ideas of Reference,* and *Suspiciousness.* The SPQ yields high internal reliability and validity (Raine, 1991).

Creative Experience: Most self-report studies to date used creative achievement and/or creative profession to assess creativity when investigating the schizotypy-creativity relationship, with only one study investigating phenomenology of creativity (Nelson & Rawlings, 2008). Given that the current study population comprised mainly young individuals (students), making it inappropriate to measure creativity by outcomes such as creative achievements or profession, we assessed creative experience using The Experience of Creativity Questionnaire (ECQ; Nelson & Rawlings, 2009). The ECQ consists of 63 items assessed on a Likert-scale and contains seven factors over two parts: A and B. Part A captures the experience of the creative process: *Distinct Experience (i.e., as compared with everyday life), Anxiety, Absorption, Power/Pleasure, Clarity/Preparation.* Part B taps into the (existential) meaning of being engaged in creative activity. Only the responses to the items of Part A were included in the current investigation, since they tap into experiential aspects directly related to the creative process, and were found to positively associate with positive schizotypy as measured by O-LIFE (Nelson & Rawlings, 2010). The ECQ has demonstrated sound construct validity in a sample of 100 artists, but as stated by the authors "the ECQ could potentially be used in studies of creativity with non-artist samples or in studies of other creative domains. For example, a sample not selected for creativity could complete the

questionnaire by thinking about their most creative experience in any domain or in everyday life." (Nelson & Rawlings, 2009, p.50).

Dispositional Mindfulness: The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) is a 39-item Likert-scale questionnaire measuring five facets: *Observing, Acting with Awareness, Describing, Non-Reacting, and Non-Judging*. The FFMQ is a widely used measure of dispositional mindfulness with good reliability and validity, with higher scores (indicating higher trait mindfulness) found to associate with better psychological wellbeing (Baer et al., 2006; 2008).

2.4. Data analysis strategy

The data were inspected for random response patterns using the analysis of univariate and multivariate outliers, as well as survey response times; no problematic responders were identified.

All variables were checked for distribution normality using Q-Q plots. The scores for the *Magical Thinking* subscale of the SPQ were positively skewed; consequently, non-parametric approaches were used throughout, including Spearman correlations to investigate relationships between the various scales, and bootstrapping to derive *p*-values and confidence intervals for the main analyses.

To investigate whether the associations between positive schizotypy aspects *Magical Thinking* and *Unusual Experiences* with each of the ECQ Part A subscales are attenuated by *Suspiciousness* (aim i), moderation analysis was performed using 'PROCESS' for SPSS (Hayes, 2013) with 10,000 bootstraps to derive *p*-values corresponding to an alpha level of .01 to adjust for multiple models. Simple slopes analysis was performed to further inspect moderations when *Suspiciousness* was at low, mean, and high levels (Hayes, 2013).

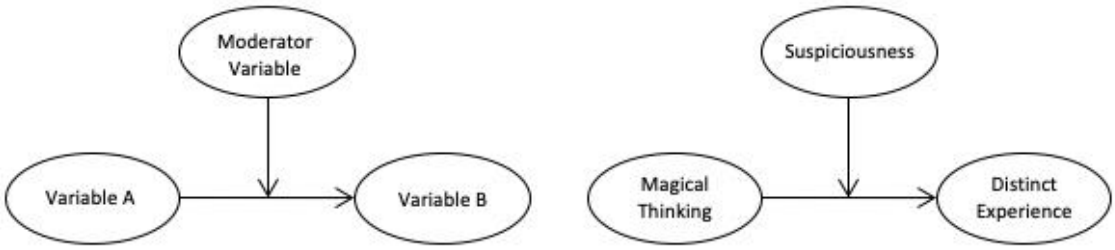

Fig 1. An example of a moderation analysis model testing the moderating effect of SPQ *Suspiciousness* subscale scores on the relationship between SPQ subscale *Magical Thinking* and ECQ factor *Distinct Experience* scores.

To explore whether dispositional mindfulness interacts differentially with the aspects of positive schizotypy (*Magical Thinking* and *Unusual Experiences* vs. *Suspiciousness* and *Ideas of Reference*) in their relationship with creative experience (aim ii), linear regressions with interaction effects were performed. To decrease the risk of Type I error (given the number of SPQ subscales and FFMQ facets), the number of models was reduced by deriving conglomerate scores for i) *Magical Thinking + Unusual Experiences* (MTUE) and ii) *Suspiciousness + Ideas of Reference* (SuspIoR). The subscales were combined into conglomerate scores on the basis of our previous research showing a dissociation between *Magical Thinking* and *Unusual Experiences* vs. *Suspiciousness* and *Ideas of Reference* in mindfulness meditators (Antonova et al., 2016). Cronbach's alpha for combined items for MTUE and SuspIoR was .77 and .89, respectively, indicating good reliability of the conglomerate scores. A total of 25 regression models were run to explore interaction effects, with 10,000 bootstraps to derive *p*-values corresponding to the alpha level of .01 to adjust for multiple models.

The regression models were as follows:

$$Y_i = (b_0 + b_1A_i + b_2B_i + b_3C_i + b_4AC_i + b_5\mathrm{BC_i}) + e_i$$

Where A is the score on the first measure, B is the score on the second measure, C is the score on the third measure, with AC and BC being the interaction terms for the first with the third and the second with the third measures respectively.

For example:

$$\text{ECQ Absorption} = (b_0 + b_1\text{MTUE}_i + b_2\text{SuspIoR}_i + b_3\text{FFMQ Observing}_i + b_4\text{MTUE x FFMQ Observing}_i + b_5\text{SuspIoR x FFMQ Observing}_i) + error_i$$

3. Results

3.1. Sample characteristics

Sample characteristics can be found in Table 1. Supplementary Materials Table A.1 provides Cronbach's alpha coefficients and Table A.2 provides the mean scores (and standard deviations) of the study's sample for SPQ positive schizotypy, ECQ Part A, and FFMQ subscales.

Table 1. Demographic Sample characteristics.

Demographic	**N=342**
Age (Mean ± SD years, range)	25.97 ± 8.37, 18-61
	n (%)
Gender	
Male	84 (24.6)
Female	256 (74.9)
Prefer not to say	2 (0.6)
Education Level	
GCSE/Equivalent	13 (3.8)
College, no degree	56 (16.4)
Associate degree	11 (3.2)
Bachelor's degree	142 (41.5)
Master's degree	96 (28.1)
Professional degree	4 (1.2)
Doctorate	20 (5.8)
Creative Activity Status	
Regularly creative*	137 (40.1)
Not regularly creative/not specified	205 (59.9)

*Regularly engages in creative activity either as hobby, study, or profession

The mean total SPQ score (M = 20.62, SD = 13.09) and SPQ positive schizotypy score (M = 7.69, SD = 6.21) were similar to those observed in general population samples in creativity studies (e.g., Folley & Park 2005; Gibson et al., 2009). Levels of dispositional mindfulness, whilst marginally higher for *Observing*, were comparable to meditation-naive general population samples (e.g., Baer et al., 2008, 2011; López et al., 2016). The mean for total FFMQ score was slightly lower than those found in Baer et al.'s (2011) student sample. The sample means for ECQ Part A total and subscale scores (apart from *Clarity/Preparation*) were slightly lower to those found for the sample of 100 artists (Nelson & Rawlings, 2009), with the subsample mean of participants regularly engaged in creative activity being more comparable, whereas the subsample for participants without regular engagement was lower.

Although we defined creativity in broad terms for the purpose of the present study as a process that could be employed in many different contexts, regular engagement in creative activity (e.g. visual art, creative writing, music), either through hobby, profession, or study, was consistently associated with higher scores on all ECQ facets (Table A.5). Further, being regularly engaged in creative activity was associated with higher scores on overall positive schizotypy and its subscales, except for *Suspiciousness*, with the strongest association being for *Magical Thinking* (Table A.6). Subsamples with and without regular engagement in creative activities did not differ on overall SPQ scores.

3.2. Moderation analysis

Magical Thinking, Unusual Experiences, and *Suspiciousness* subscales of the *SPQ* significantly positively correlated with the scores on ECQ facets related to positive 'flow'-type experience of creativity, namely *Distinct Experience, Absorption,* and *Power/Pleasure* (See Table A.2; Fig. A.1a).

Suspiciousness attenuated the positive associations of *Magical Thinking* and *Unusual Experiences* with *Power/Pleasure* (see Table 2 for the results of the moderation analysis). The attenuating effect of *Suspiciousness* upon the relationship between *Unusual Experiences* and *Power/Pleasure* was highly significant (interaction effect: b = -.23, 95%CI [-.42, -.05], p = .01), whereas it was significant at the unadjusted alpha level of .05 for the relationship between *Magical Thinking* and *Power/Pleasure* (interaction effect: b = -.29, 95% CI [-.54, -.03], p = .03). Simple slopes analysis indicated that when *Suspiciousness* scores were low-to mean, there was a significant positive linear relationship between *Unusual Experiences* and *Magical Thinking* with *Power/Pleasure* scores (p < .001); however, this relationship was disrupted (and completely non-significant for *Unusual Experiences*) when *Suspiciousness* scores were higher than mean (see Table 2 and Fig. 2).[1]

[1] Post-hoc power analysis revealed that for our main hypothesis (moderation analysis), with the sample size of 342 and 3-predictor variable equations, the power for the detection of small-to-medium effect sizes obtained at the adjusted .01 level is .99 (Cohen, 1988; calculated using G*Power, Erdfelder, Faul, & Buchner, 1996).

No further significant moderations were observed (see Table A.3 for full results).

Table 2. Significant moderations and conditional effects of *Suspiciousness* on the relationship of SPQ *Magical Thinking* and *Unusual Perceptual Experiences* with ECQ *Power/Pleasure.*

	Model	***β (SE)***	***p* value [95% CI]**
Magical Thinking	**Predictor**		
	MT	1.52 (.29)	<.001 [.96, 2.08]
	Susp	.50 (.20)	.02 [.10, .90]
	MT x Susp	-.29 (.13)	.03 [-.54, -.03]
	Model Summary R^2 = .11, F (3,338) = 13.91, p <.001; f^2 = .12		
	Conditional Effects of *Suspiciousness*		
	- 1 *SD* below Mean	2.16 (.43)	<.001 [1.32, 3.01]
	Mean	1.52 (.28)	<.001 [.96, 2.08]
	+ 1 *SD* Above Mean	.89 (.39)	.02 [.15, 1.62]
Unusual Perceptual Experiences	Unex	.80 (.23)	<.001 [.34, 1.25]
	Susp	.55 (.23)	.02 [.10, 1.00]
	UnEx x Susp	-.23 (.09)	.01 [-.42, -.05]
	Model Summary R^2 = .08, F (3,338) = 9.22, p <.001; f^2 = .09		
	Conditional Effects of *Suspiciousness*		
	- 1 *SD* below Mean	1.32 (.34)	<.001 [.64, 1.99]
	Mean	.80 (.23)	<.001 [.34, 1.25]
	+ 1 *SD* Above Mean	.27 (.28)	.33 [-.28. .92]

Abbreviations: MT = *Magical Thinking*; Susp = *Suspiciousness*; UnEx = *Unusual Perceptual Experiences.*

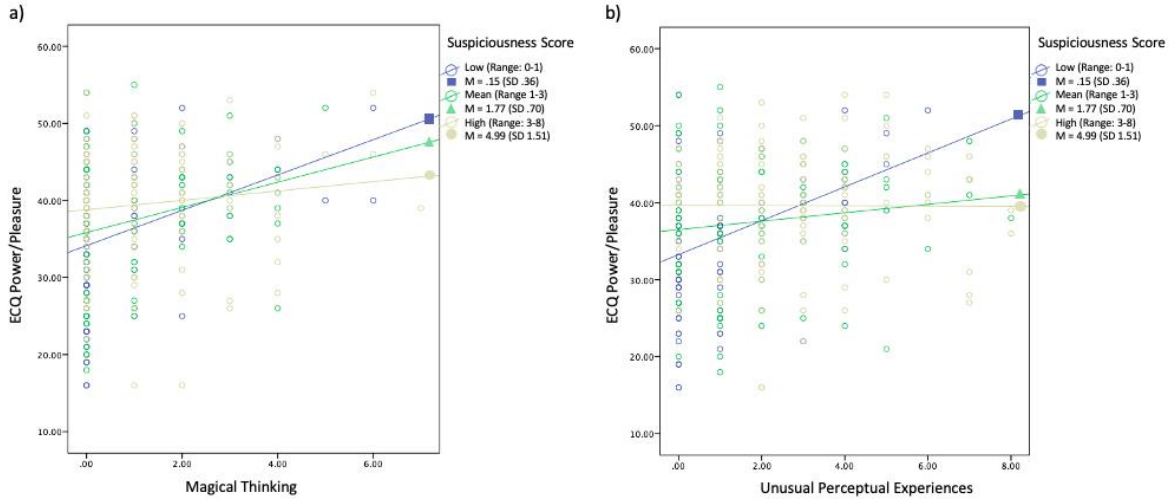

Fig. 2. Scatter plots of the raw data demonstrating the relationship between: a) SPQ Magical Thinking and ECQ Power/Pleasure, and b) SPQ Unusual Perceptual Experiences and ECQ Power/Pleasure for the sub-groups with low, mean, and high Suspiciousness scores.

3.2. Interaction effect analysis

There were a number of significant correlations between SPQ, FFMQ, and ECQ subscales (see Table A.2 and Fig. A.1). Higher total FFMQ and FFMQ subscale scores, except for *Observing*, significantly correlated with lower scores on SPQ *Suspiciousness*. Associations between FFMQ facets and ECQ Part A subscales were somewhat mixed, with positive correlations between FFMQ *Observing* and most ECQ subscales, and negative associations between most FFMQ facets and ECQ *Anxiety* (see Table A.2, and Fig. A.1). *Suspiciousness* and *Ideas of Reference* of the SPQ showed similar pattern of associations with the FFMQ subscales, whereas *Magical Thinking* and *Unusual Experiences* behaved similarly to each other, providing further justification for using conglomerate scores for *Magical Thinking* and *Unusual Experiences (MTUE)* and *Suspiciousness* and *Ideas of Reference (SuspIoR)* in exploring the interactions between positive schizotypy and dispositional mindfulness in relation to experience of creativity.

Table 3 presents a summary of the significant interaction effects (see Fig. A.2, and Table A.4 for the full results of linear regression analyses). FFMQ *Acting with Awareness* significantly interacted with *MTUE* in predicting *Clarity/Preparation* (b = .03, p = .004), such that higher levels of *Acting with Awareness* increased the positive association between *MTUE* and *Clarity/Preparation* scores. FFMQ *Non-Reacting* significantly interacted with *MTUE* in predicting ECQ *Anxiety* (b = -.06, p = .003*)*, such that as *Non-Reacting* scores increased, the positive association between *MTUE* and *Anxiety* decreased. Higher levels of *Describing* strengthened the positive association between *MTUE* and *Power/Pleasure*, with the interaction effect being significant at the unadjusted alpha level (b = .06, p = .03). A significant interaction between FFMQ *Describing* and *SuspIoR* indicated that as *Describe* scores increased, the stronger the positive association between *SuspIoR* and *Anxiety* scores became (b =.03, p = .047).

Table 3. The results of multiple linear regression analysis with significant interactions between FFMQ facet scores and conglomerate scores for SPQ *Magical Thinking + Unusual Experiences* vs. *Suspiciousness + Ideas of Reference* on predicting ECQ factor scores.

		ECQ Factor									
		Distinct Experience		***Anxiety***		***Absorption***		***Power/Pleasure***		***Clarity/Preparation***	
FFMQ Facet	**Predictor Variable**	**β (SE)**	**95% CI**	**β (SE)**	**95% CI**	**β (SE)**	**95% CI**	**β (SE)**	**95% CI**	**β (SE)**	**95% CI**
Describing	*MTUE*	-		.37** (.120)	[.12, .60]	-		.48** (.16)	[.18, .79]	-	
	SuspIoR	-		.29** (.09)	[-.13, -.46]	-		.42** (.11)	[.20, .64]	-	
	Desc	-		-.11* (.06)	[-.22, -.01]	-		.12 (.07)	[-.03, .26]	-	
	MTUE x Desc	-		-.02 (.02)	[-.06, .02]	-		.06* (.03)	[.00, .12]	-	
	SuspIoR x Desc	-		.03* (.01)	[.00, .06]	-		-.01 (.02)	[-.05, .03]	-	
	Model Summary	-		*Adjusted R^2=.14, F(5,336) = 11.82, p<.001*		-		*Adjusted R^2=.11, F(5,336) = 9.41, p<.001*		-	
***Non-Reacting* (NR)**	*MTUE*	-		.37** (.12)	[.13, .61]	-		-		-	
	SuspIoR	-		.36** (.08)	[.16, 48]	-		-		-	
	NR	-		-.02 (.07)	[-.15, .11]	-		-		-	
	MTUE x NR	-		-.06** (.02)	[-.11, -.02]	-		-		-	
	SuspIoR x NR	-		.03 (.01)	[-.01, .06]	-		-		-	
	Model Summary	-		*Adjusted R^2=.13, F(5,336) = 11.19, p<.001*		-		-		-	
Acting with Awareness (AwA)	*MTUE*	-		-		-		-		.22** (.07)	[.09, .35]
	SuspIoR	-		-		-		-		.07 (.05)	[-.02, .17]
	AwA	-		-		-		-		.06 (.03)	[-.01, .11]
	MTUE x AwA	-		-		-		-		.03** (.01)	[.01, .05]
	SuspIoR x AwA	-		-		-		-		-.01 (.01)	[-.02, .01]
	Model Summary	-		-		-		-		*Adjusted R^2=.06, F(5,336) = 5, p<.001*	

*p <.05, **p <.01

Abbreviations: AwA = *Acting with Awareness*; Desc = *Describing;* ECQ = *Experience of Creativity Questionnaire*; FFMQ = *Five Facet Mindfulness Questionnaire*; MTUE = *Magical Thinking + Unusual Experiences* conglomerate scores; NR = *Non-Reacting*; SuspIoR = *Suspiciousness + Ideas of Reference* conglomerate scores.

4. Discussion

The study aimed to investigate the inter-relationships between positive schizotypy, dispositional mindfulness, and experience of creativity. In partial support of our hypothesis, the positive linear relationship between the positive schizotypy aspects of magical thinking and unusual experiences with the experience of creativity was attenuated by higher levels of suspiciousness/paranoia. However, this effect was specific to the aspect of *Power/Pleasure*, and was significant at the unadjusted alpha level of .05 for *Magical Thinking.* No moderation effects were observed for *Distinct Experience, Absorption*, *Anxiety*, or *Clarity/Preparation.* Explorative analysis showed the interactive effects of dispositional mindfulness upon the relationship between the aspects of positive schizotypy and creative experience.

4.1. Moderation of the relationship between positive schizotypy and creative experience by suspiciousness

Suspiciousness/paranoia attenuated the positive relationship of magical thinking and unusual experiences with the power/pleasure aspect of creative experience. However, higher level of suspiciousness in itself was associated with higher power/pleasure. Nevertheless, when higher levels of magical thinking or unusual experiences were accompanied by *low-to-mean* suspiciousness levels, the self-reported power/pleasure was higher than when they were accompanied by *higher* levels of suspiciousness (see Fig. 2).

This pattern of the results may explain the inconsistency observed in the previous studies using the SPQ to investigate the relationship between positive schizotypy and creativity (for example, Minor et al., 2014 found a significant positive relationship, but Fink et al., 2013; Gibson et al., 2009; Rominger et al., 2014 did not). The findings using the O-LIFE, which captures magical thinking and unusual experiences but not suspiciousness, have been more consistent, with many studies having observed positive relationships between positive schizotypy and creativity (e.g., Batey & Furnham, 2008; Nettle & Clegg, 2006; Rawlings & Locarnani, 2008; Winston et al., 2014; but see Claridge & McDonald, 2009; Rybakowski & Klonowska 2011). Our findings suggest that the inconsistency between studies using different self-report measures may arise due to the quantification of positive schizotypy with or without suspiciousness as one of its aspects. Conversely, inconsistencies between the studies using the same self-report measure could be due to the samples being different on the levels of suspiciousness/paranoia; something that would be missed if suspiciousness is not assessed at all, or if only the total positive schizotypy score of the SPQ is used in probing the

relationship with creativity. Future studies should give special consideration to the role of suspiciousness when investigating the relationship between positive schizotypy and creativity. The studies using O-LIFE should additionally quantify suspiciousness/paranoia; for example, by utilising the recommended Paranoia/Suspiciousness Questionnaire (PSQ; Rawlings and Freeman, 1997), whereas the studies using the SPQ should pay attention to the 'composition' of high positive schizotypy by the scores on different subscales (e.g. high magical thinking and/or unusual experiences vs. suspiciousness/paranoia).

The observed attenuating effect of suspiciousness/paranoia was specific to the experience of power/pleasure, even though magical thinking and unusual experiences (as well as suspiciousness) were significantly positively correlated with other 'flow'- type aspects of creative experience as measured by *Distinct Experience* and *Absorption* ECQ sub-scales. The *Power*/*Pleasure* subscale taps into a positive affect experienced during a 'flow'-like state associated with being emerged in a creative activity (pleasure), as well as a sense of control (power) (Csikszentmihalyi, 1990; Nelson and Rawlings, 2009). Pleasure is a defining feature of 'flow' (Nelson & Rawlings, 2009) and a key part of the creative process (Henderson, 2004; Russ, 1993) that contributes to intrinsic motivation for creative activity (Nelson & Rawlings, 2007), aiding creative output (Amabile et al., 1985; Amabile et al., 1996). The specificity of the observed attenuating moderation upon power/pleasure as an aspect of creative experience should be investigated further, alongside understanding the interaction of magical thinking and/or unusual experiences with suspiciousness in relation to the type of creative activity and output.

4.2. Inter-relationships between positive schizotypy, dispositional mindfulness, and creative experience

When exploring the interaction effects between dispositional mindfulness and conglomerate scores on *Magical Thinking/Unusual Experiences* vs. *Suspiciousness/Ideas of Reference* on predicting ECQ subscale scores, mindfulness facets *Describing*, *Non-Reacting*, and *Acting with Awareness* were found to affect the relationship between the aspects of positive schizotypy and creative experience as captured by ECQ subscales *Power/Pleasure*, *Anxiety*, and *Clarity/Preparation*.

Specifically, *Describing* strengthened the predictive power of *Magical Thinking/Unusual Experience* upon *Power/Pleasure*. However, *Describing* also enhanced the predictive power

of *Suspiciousness/Ideas of Reference* upon *Anxiety*. The items constituting ECQ's *Anxiety* subscale mainly refer to the state of fragility, vulnerability, and exhaustion following the creative activity, but some items refer to the creative process itself as being fragile due to absorption being interrupted by becoming self-conscious. Suspiciousness/paranoia and ideas of reference as instances of self-referential processing might 'colour' the ability to describe experiences through self-critical lens, increasing the sense of instability of the 'flow' state. Given the enhancing effect of *Describing* on the relationship between *Magical Thinking/Unusual Experiences* and *Power/Pleasure*, mindfulness training to reduce suspiciousness may remove the double-edge sword of the ability to describe experiences by reducing critical self-referencing and the activity of the associated Default Mode Network (DMN) - the main mechanism underlying the efficacy of mindfulness-based interventions (e.g. Berkovich-Ohana et al., 2012; Brewer et al., 2011; Farb et al. 2007; Goldin et al., 2009).

The potential positive effect of mindfulness training on creative experience in people with positive schizotypy is further indicated by the finding that *Non-Reacting* weakened the positive association between *Magical Thinking/Unusual Experience* and *Anxiety*. *Non-Reacting*, an ability to be present with one's experiences, whether pleasant or unpleasant, without reacting to or being caught up in them, might buffer against anxiety/vulnerability-provoking experience during and after creative process. Non-reactivity as one of the last mindfulness skills to emerge as a result of mindfulness training using Mindfulness-Based Cognitive Therapy (Kuyken et al., 2010), and was found to differentiate meditators from non-meditators (Antonova et al., 2016; Soler et al., 2014), adding impetus for using mindfulness-based interventions for developing non-reactivity towards the aspects of creative process that might be experienced as negative/unpleasant.

Acting with Awareness enhanced the predictive power of *Magical Thinking/Unusual Experience* upon *Clarity/Preparation*. *Acting with Awareness* facet is mainly comprised of the items pertaining to the Mindful Attention and Awareness Scale (Brown and Ryan, 2003), measuring the propensity to run on 'automatic pilot'/mind-wander during daily activities, so its association with being clear and aware of one's actions before and during creative engagement is intuitively appealing. *Acting with awareness* predicts cognitive flexibility and control (Moore & Malinowski, 2009), known to aid creativity (Zabelina & Robinson, 2010).

In addition to the interactions, dispositional mindfulness, except for the facet *Observing*, significantly correlated with lower suspiciousness, complimenting previous findings

(Antonova et al., 2016; Kingston et al., 2019). Mindfulness promotes inter-personal attitudes (Condon, 2017) incompatible with suspiciousness/paranoia (Freeman et al., 2005), increasing metacognitive insight and decentred awareness (Chadwick, 2006), which may reduce reactivity to and fixation upon suspicious/paranoid thoughts. Greater dispositional mindfulness also negatively correlated with ideas of reference, in line with the results of Antonova et al. (2016), a trait linked to both paranoia (Bebbington et al., 2013; Fenigstein & Vanable, 1992) and over-active DMN in schizophrenia, associated with hyper self-referencing (Cannon, 2015; Whitfield-Gabrieli et al., 2009).

Previous research points to a genetic overlap between creativity and schizophrenia and related disorders, with polygenic risk scores for these disorders being shown to significantly associate with creativity (Li et al., 2020; Power et al., 2015). Our findings provide further support for the notion that schizophrenia-related genotype/phenotype may afford evolutionary benefits such as creative ability, particularly in milder expressions of its features (Kinney et al., 2001, Acar et al., 2018) such as positive schizotypy (Acar & Sen, 2013), which might explain its presence in the general population. On the other hand, suspiciousness/paranoia, an aspect of positive schizotypy, carries high predictive power for conversion to psychosis in high-risk individuals (Cannon et al., 2008). The findings of the current study suggest that it has an attenuating effect of positive association of magical thinking and unusual experiences with the aspects of creative experience related to positive affect. Given that higher dispositional mindfulness was also associated with lower suspiciousness, together, our findings provide support for the use of mindfulness-based interventions in protecting against psychosis risk presented by suspicious/paranoia, whilst preserving and possibly enhancing an otherwise favourable association of magical thinking and unusual experiences with the creative process.

4.3. Study limitations

The present study was primarily concerned with moderation and interaction effects, rather than prediction models of 'best fit'; however, we note the relatively small effect sizes observed for the models. This may indicate noise due to measurement error (Loken & Gelman, 2017), with ECQ sub-facet *'Clarity/Preparation'* having poor reliability in the present sample (Cronbach alpha of .53, see Table A.1). More generally, the ECQ's validity and internal consistency is yet to be established. However, it is reassuring that we have replicated the findings using the SPQ to those reported by Nelson and Rawlings (2010) using

O-LIFE. Furthermore, reassuringly higher scores on all facets of creative experience were associated with being regularly engaged with creative activity in the present sample, aiding ECQ's construct validity.

The use of self-report mindfulness measures in the general population has been criticized due to the possibility of the items being misinterpreted by meditation-naïve individuals (Grossman, 2008). However, the observed interactive effects fit well within the theoretical framework used in this study. They do, nevertheless, require a replication due to the large number of tests performed, with some associations observed at the unadjusted alpha level.

5. Conclusions

The study provides preliminary evidence that higher levels of suspiciousness/paranoia disrupt the positive relationship of magical thinking and unusual experiences with creative experience, which might help to explain the inconsistency of previous research into the link between positive schizotypy and creativity. The explorative findings suggest that dispositional mindfulness enhances the associations of magical thinking and unusual experiences with the aspects of creative experience related to positive affect and clarity/preparation. An overall pattern of the results, including the inverse relationship between most aspects of dispositional mindfulness and suspiciousness/paranoia, warrants the application of mindfulness-based interventions for reducing suspiciousness/paranoia as psychosis risk factor, whilst supporting the otherwise favourable association of magical thinking and unusual experiences with creativity.

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Appendix: **Supplementary Online Materials**

Table A.1. Cronbach's alpha for the current sample *(N = 342)*, descriptions and item examples for the subscales of the *SPQ (positive schizotypy dimension)*, *FFMQ*, and *ECQ (Part A)*.

Scale/Subscale	Cronbach's Alpha	Description	Item Example
SPQ positive subscales			
Odd Beliefs/ Magical Thinking	*a* = .66	Belief in the supernatural/paranormal, e.g., telepathy.	'Are you sometimes sure that other people can tell what you are thinking?'
Unusual Perceptual Experiences	*a* = .70	Perceiving things which others don't, e.g., hallucinations.	'Have you ever seen things invisible to other people?'
Ideas of Reference	*a* = .79	Attributing personal significance to external events.	'When you see people talking to each other, do you often wonder if they are talking about you?'
Suspiciousness	*a* = .80	Distrust of others, perceptions of threat from others.	'Do you often pick up hidden threats or put-downs from what people say or do?'
FFMQ			
Observing	*a* = .81	Noticing internal and external experiences (e.g., thoughts, feelings, external sensory information such as sounds and smells).	'I pay attention to sensations, such as the wind in my hair or sun on my face.'
Describing	*a* = .88	Ability to label and describe internal experiences.	'I can usually describe how I feel at the moment in considerable detail.'
Acting with Awareness	*a* = .86	Attending, with awareness, to the present moment or current activity (as opposed to 'running on automatic pilot').	'When I do things, my mind wanders off and I'm easily distracted (reversed).'
Non-Judging (of inner experience)	*a* = .91	Ability to bring a non-judgmental attitude to thoughts and feelings.	'I make judgements about whether my thoughts are good or bad (reversed).'
Non-Reacting (to inner experience)	*a* = .80	Ability to not get caught up in thoughts and feelings, letting them come and go as they occur.	'I perceive my feelings and emotions without having to react to them.'
ECQ Part A			
Distinct Experience	*a* = .82	Creativity as a distinct experience compared to everyday experience, including reduced self-awareness and boundaries.	'I experienced relief that I was removed from the world of everyday perception.'
Anxiety	*a* = .71	A sense of vulnerability or anxiety associated with the creative process.	'I believed strongly in what I was creating, without doubting or questioning myself (reversed).'
Absorption	*a* = .87	A sense of being deeply absorbed in the creative process.	'I lost awareness of time and my physical surroundings.'
Power/Pleasure	*a* = .78	Affective-related aspect, reflecting a sense of pleasure and control during the creative process.	'It was characterised by intense feelings of joy and satisfaction.'
Clarity/Preparation	*a* = .53	A sense of certainty about which direction the creative work will be taken, including the preparation for the process.	'I put myself in the mood I wanted my creative work to take on.'

Abbreviations: ECQ = *Experience of Creativity Questionnaire*; FFMQ = *Five Facet Mindfulness Questionnaire*; SPQ = *Schizotypal Personality Questionnaire*

Table A.2. Spearman correlations between the SPQ (positive schizotypy), FFMQ, and ECQ Part A with mean scores and standard deviations.

	PS Total	**IOR**	**MT**	**UE**	**Susp**	**ECQ A Total**	**DE**	**Anx**	**Abs**	**P/P**	**C/P**	**FFMQ Total**	**Obs**	**Desc**	**AwA**	**NJ**	**NR**
Mean (SD)	7.69 (6.21)	2.56 (2.46)	.98 (1.89)	1.86 (1.92)	2.30 (2.24)	130.30 (27.80)	25.76 (7.90)	19.65 (5.77)	34.24 (8.51)	37.52 (7.98)	13.13 (3.23)	125.29 (18.16)	27.43 (5.87)	27.50 (6.14)	24.84 (5.84)	24.45 (7.20)	21.07 (4.75)
PS Total	-																
IOR	.84**	-															
MT	.62**	.41**	-														
UE	.76**	.47**	.51**	-													
Susp	.80**	.60**	.29**	.44**	-												
ECQ A Total	.42**	.38**	.32**	.30**	.26**	-											
DE	.42**	.38**	.30**	.31**	.30**	.90*	-										
Anx	.36**	.33**	.19**	.26**	.29**	.73**	.71**	-									
Abs	.28**	.26**	.26**	.22**	.14*	.90**	.74**	.55**	-								
P/P	.36**	.33**	.29**	.23**	.23**	.85**	.65**	.45**	.73**	-							
C/P	.12**	.20**	.18**	.14*	.10	.51**	.31**	.11*	.43**	.54**	-						
FFMQ Total	-.24**	-.21**	.17	-.11*	-.33**	.03	-.06	-.21**	.13**	.08	.17**	-					
Obs	.12**	.13*	.21**	.22**	.04	.36**	.32**	.16**	.38**	.30**	.26**	.43**	-				
Desc	-.22**	-.18**	-.21	-.09	-.31**	-.04	-.11	-.18**	.05	.03	.08	.68**	.14**	-			
AwA	-.18**	-.11*	-.04	-.16**	-.20**	-.15**	-.20**	-.25**	-.08	-.82	.06	.64**	.01	.34**	-		
NJ	-.38**	-.32**	-.12*	-.28**	-.39**	-.15**	-.18**	-.26**	-.03	-.12*	-.01	.68**	-.04	.31**	.39**	-	
NR	-.07	-.11*	.07	.02	-.13*	.14**	.08	-.02	.18**	.17**	.16**	.59**	.26**	.24**	.27**	.27**	-

*p<.05, **p<.01

Abbreviations: ABS = *Absorption*; Anx = *Anxiety*; AwA = *Acting with Awareness*; C/P = *Clarity/Preparation*; DE = *Distinct Experience*; Desc = *Describing*; ECQ A Total = *Experience of Creativity Questionnaire Part A Total*; FFMQ Total = *Five Facet Mindfulness Questionnaire Total*; IOR = *Ideas of Reference*; MT = *Magical Thinking*; NJ = *Non-judging*; NR = *Non-reacting*; Obs = *Observing*; P/P = *Power/Pleasure*; PS Total = *Positive Schizotypy Total*; Susp = *Suspiciousness*.

Table A.3. The results of all models testing the moderation effect of SPQ *Suspiciousness* on the relationship of SPQ *Unusual Perceptual Experiences* and *Magical Thinking* with the ECQ Part A factors.

SPQ Factor	ECQ Facet	Predictors	β (SE)	*p* value [95% CI]
Unusual Perceptual Experiences	***Distinct Experience***	*Unusual Perceptual Experiences*	1.19 (.25)	<.001[70, 1.69]
		Suspiciousness	.59 (.21)	.006[.17, 1.01]
		UnEx x Susp	-.11 (.10)	.26[-.30, .08]
		Constant	25.97 (.43)	<.001[25.11, 26. 82]
		Model Summary	*R^2 = .14; F (3,338) = 16.52, p <.001*	
	Absorption	*Unusual Perceptual Experiences*	1.05 (.24)	<.001[.59, 1.52]
		Suspiciousness	.17 (.24)	.47[-.29, .64]
		UnEx x Susp	-.18 (.10)	.08[-.39, .02]
		Constant	43.58 (.46)	<.001[33.67, 35.49]
		Model Summary	*R^2 = .06; F (3,338) = 8.28, p <.001*	
	Anxiety	*Unusual Perceptual Experiences*	.71 (.18)	<.001[.35, 1.07]
		Suspiciousness	.47 (.16)	.003[.16, .78]
		UnEx x Susp	.06 (.07)	.39[-.19, .08]
		Constant	19.76 (.32)	<.001[19.13, 20.40]
		Model Summary	*R^2 = .12; F (3,338) = 14.02, p <.001*	
	Power/Pleasure	*Unusual Perceptual Experiences*	.80 (.23)	< .001[.34, 1.25]
		Suspiciousness	.55 (.23)	.02[.10, 1.00]
		UnEx x Susp	-.23 (.09)	.01[-.42, -.05]
		Constant	37.95 (.45)	< .001[37.07, 38.83]
		Model Summary	*R^2 = .08; F (3,338) = 9.22, p <.001*	
	Clarity/Preparation	*Unusual Perceptual Experiences*	.27 (.10)	<.01[-.07, .48]
		Suspiciousness	.07 (.09)	.44[-.11, .26]
		UnEx x Susp	.07 (.04)	.06[-.15, .00]
		Constant	13.27 (.19)	<.001[12.89, 13.64]
		Model Summary	*R^2 = .03; F (3,338) = 3.97, p =.008*	
Magical Thinking	***Distinct Experience***	*Magical Thinking*	1.42 (.33)	<.001[.77, 2.07]
		Suspiciousness	.77 (.20)	<.001[.38, 1.17]
		MT x Susp	-.14 (.17)	.41[-.48, .20]
		Constant	25.86 (.42)	<.001[25.04, 26.68]
		Model Summary	*R^2 = .13; F (3,338) = 14.86, p <.001*	
	Absorption	*Magical Thinking*	1.42 (.30)	<.001[.84, 2.01]
		Suspiciousness	.25 (.22)	.25[-.18, .68]
		MT x Susp	-.16 (.25)	.30[-.45, .14]
		Constant	34.35 (.45)	<.001[33.47, 35.23]
		Model Summary	*R^2 = .06; F (3,338) = 9.20, p <.001*	
	Anxiety	*Magical Thinking*	.56 (.21)	.007[.15, .96]
		Suspiciousness	.62 (.14)	<.001[.34, .09]
		MT x Susp	.00 (.11)	.98[-.21, .22]
		Constant	19.65 (.30)	<.001[19.06, 20.24]
		Model Summary	*R^2 = .09; F (3,338) = 9.81, p <.001*	
	Power/Pleasure	*Magical Thinking*	1.52 (.29)	<.001[.96, 2.08]
		Suspiciousness	.50 (.20)	.02[.10, .90]
		MT x Susp	-.29 (.13)	.03[-.54. -.03]
		Constant	37.72 (.42)	<.001[.36.90, 38.54]
		Model Summary	*R^2 = .11; F (3,338) = 13.91, p <.001*	
	Clarity/Preparation	*Magical Thinking*	.39 (.13)	.003[.13, .65]
		Suspiciousness	.07 (.08)	.40[-.09, .23]
		MT x Susp	-.02 (.06)	.71[-.14, .09]
		Constant	13.14 (.18)	<.001[12.79, 13.50]
		Model Summary	*R^2 = .03; F (3,338) = 3.87, p* = .009	

Abbreviations: ECQ = *Experience of Creativity Questionnaire*; MT = *Magical Thinking*; SPQ = *Schizotypal Personality Questionnaire*; Susp = *Suspiciousness*.

Table A.4. Full results of multiple linear regression analysis testing the interaction effects between FFMQ facet scores and conglomerate scores for SPQ *Magical Thinking + Unusual Experiences* vs. *Suspiciousness + Ideas of Reference* on predicting ECQ factor scores.

		ECQ Factor									
	Predictor Variable	***Distinct Experience***		***Anxiety***		***Absorption***		***Power/Pleasure***		***Clarity/Preparation***	
FFMQ Facet		**β (SE)**	**95% CI**	**β (SE)**	**95% CI**	**β (SE)**	**95% CI**	**β (SE)**	**95% CI**	**β (SE)**	**95% CI**
Observing	*MTUE*	.56** (.20)	[.1ß4, .93]	.28* (.13)	[.02, .53]	.47* (.20)	[.07, .85]	.39* (.18)	[.03, .72]	.09 (.07)	[-.05, .24]
	SuspIoR	.42** (.11)	[.20, .64]	.33**(.08)	[.17,.49]	.16 (.12)	[-.08, .40]	.34** (.12)	[.12, .57]	.08 (.05)	[-.01, .17]
	FFMQ Obs	.33** (.07)	[.20, 48]	.12* (.05)	[.02, .23]	.48**(.07)	[.34, .62]	.34** (.07)	[.21, .48]	.12** (.03)	[.07, .18]
	MTUE x Obs	-.02 (.04)	[-.08, .05]	2.81 (.02)	[-.04, .04]	-.04 (.03)	[-.10, .03]	-.05 (.03)	[-.11, .01]	-.01 (.01)	[-.03, .02]
	SuspIoR x Obs	.00 (.02)	[-.03, .05]	.00 (.01)	[-.02, .03]	-.01 (.02)	[-.05, .03]	-.01 (.02)	[-.05, .03]	-.00 (.01)	[-.02, .01]
	Model Summary	*Adjusted R^2=.22, F(5,336) = 20.59, p<.001*		*Adjusted R^2=.13, F(5,336) = 11, p<.001*		*Adjusted R^2=.19, F(5,336) = 16.58, p<.001*		*Adjusted R^2=.18, F(5,336) = 15.67, p<.001*		*Adjusted R^2=.08, F(5,336) = 7.16, p<.001*	
Describing	*MTUE*	.72** (.17)	[.38, 1.06]	.37** (.12)	[.14, .61]	.66** (.18)	[.31, 1.01]	.48** (.16)	[.18, .79]	.14* (.07)	[.01, .28]
	SuspIoR	.42** (.12)	[.20, .65]	.29** (.09)	[-.12, -.46]	.23 (.13)	[-.02, .47]	.42** (.11)	[.20, .64]	.12** (.05)	[.02, .21]
	FFMQ Desc	-.05 (.07)	[-.18, .08]	-.11* (.06)	[-.22, -.01]	.11 (.08)	[-.05, .27]	.12 (.07)	[-.02, .26]	.06* (.03)	[.01, .11]
	MTUE x Desc	.00 (.03)	[-.05, .06]	-.02 (.02)	[-.06, .02]	.03 (03)	[-.03, .08]	.06* (.03)	[.01, .11]	.01 (.01)	[-.01, .03]
	SuspIoR x Desc	.03 (.02)	[-.01, .06]	.03* (.01)	[-.00, .06]	.01 (.02)	[-.03, .05]	-.01 (.02)	[-.05, .03]	.01 (.01)	[-.01, .02]
	Model Summary	*Adjusted R^2=.17, F(5,336) = 14.99, p<.001*		*Adjusted R^2=.14, F(5,336) = 11.82, p<.001*		*Adjusted R^2=.07, F(5,336) = 6.39, p<.001*		*Adjusted R^2=.11, F(5,336) = 9.41, p<.001*		*Adjusted R^2=.05, F(5,336) = 4.63, p<.001*	
Acting with Awareness (AwA)	*MTUE*	.70** (.17)	[.35, 1.03]	.27* (.12)	[.03, .50]	.74** (.17)	[.40, 1.07]	.57** (.17)	[.24, .90]	.22** (.07)	[.08, .36]
	SuspIoR	.38** (.12)	[.16, .61]	.31** (.09)	[.15, .50]	.13 (.13)	[-.12, .38]	.35** (.12)	[.12, .57]	.07 (.05)	[-.02, .17]
	AWA	-.17* (.07)	[-.31, -.03]	-.17** (.06)	[-.28, -.06]	-.07 (.09)	[-.23, .10]	-.04 (.08)	[-.19, .12]	.06 (.03)	[-.01, .11]
	MTUE x AwA	.01 (.03)	[-.04, .07]	-.03 (.02)	[-.06, 0.1]	.04 (.03)	[-.02, .11]	.04 (.03)	[-.01, .10]	.03** (.01)	[.01, .05]
	SuspIoR x AwA	.01 (.02)	[-.03, .05]	.02 (.02)	[-.01, .05]	-.01 (.02)	[-.05, .04]	.01 (.02)	[-.03, .05]	-.01 (.01)	[-.02, .01]
	Model Summary	*Adjusted R^2=.18, F(5,336) = 15.97, p<.001*		*Adjusted R^2=.15, F(5,336) = 13.03, p<.001*		*Adjusted R^2=.07, F(5,336) = 6.21, p<.001*		*Adjusted R^2=.10, F(5,336) = 8.75, p<.001*		*Adjusted R^2=.06, F(5,336) = 5, p<.001*	
Non-Judging (NJ)	*MTUE*	.69** (.18)	[.34, 1.04]	.32** (.12)	[.08, .55]	.71** (.18)	[.35, 1.06]	.53** (.17)	[.20, .86]	.17* (.07)	[.02, .31]
	SuspIoR	.43** (.12)	[.20, .67]	.26** (.09)	[.09, .43]	.17 (.14)	[-.09, .44]	.39** (.12)	[.15, .63]	.10* (.05)	[.00, .20]
	NJ	-.03 (.05)	[-.14, .08]	-.13** (.05)	[-.22, -.04]	.03 (.07]	[-.10, .17]	.01 (.07)	[-.12, .14]	.03 (.03)	[-.03, .08]
	MTUE x NJ	-.01 (.02)	[-.05, .03]	-.01 (.02)	[-.04, .03]	.02 (.02)	[-.02, .06]	.02 (.02)	[-.03, .06]	.01 (.01)	[-.01, .03]
	SuspIoR x NJ	.02 (.02)	[-.01, -.05]	.01 (.01)	[-.01, .03]	-.00 (.02)	[-.04, .03]	.02 (.02)	[-.01, .05]	.01 (.01)	[-.01, .02]

	Model Summary	*Adjusted R^2=.17, F(5,336) = 14.72, p<.001*		*Adjusted R^2=.14, F(5,336) = 12.20, p<.001*		*Adjusted R^2=.06, F(5,336) = 5.64, p<.001*		*Adjusted R^2=.10, F(5,336) = 8.44, p<.001*		*Adjusted R^2=.04, F(5,336) = 3.54, p =.004*	
Non-Reacting (NR)	*MTUE*	.69** (.17)	[.35, 1.01]	.37** (.12)	[.14, .60]	.61** (.17)	[.26, .95]	.44** (.16)	[.13, .74]	.12 (.07)	[-.01, .26]
	SuspIoR	.44** (.12)	[.22, .67]	.32** (.08)	[.16, .48]	.23 (.12)	[-.01, .47]	.43** (.11)	[.21, .64]	.11* (.05)	[.02, .20]
	NR	.14 (.09)	[-.02, .32]	-.02 (.06)	[-.15, .10]	.35** (.09)	[.17, .53]	.35** (.08)	[.19, .51]	.13** (.04)	[.06, .20]
	MTUE x NR	-.03 (.04)	[-.09, .05]	-.06** (.02)	[-.11, -.02]	-.04 (.03)	[-.09, .03]	-.02 (.03)	[-.07, .05]	-8.19 (.02)	[-.03, .03]
	SuspIoR x NR	-.01 (.03)	[-.06, .04]	.03 (.02)	[-.01, .06]	-.01 (.02)	[-.06, .04]	-.03 (.02)	[-.07, .01]	-.01 (.01)	[-.03, .01]
	Model Summary	*Adjusted R^2=.17, F(5,336) = 15.17, p<.001*		*Adjusted R^2=.13, F(5,336) = 11.19, p<.001*		*Adjusted R^2=.11, F(5,336) = 9.13, p<.001*		*Adjusted R^2=.14, F(5,336) = 12.31, p<.001*		*Adjusted R^2=.07, F(5,336) = 5.72, p<.001*	

*p <.05 **p<.01

Abbreviations: AwA = *Acting with Awareness;* ECQ = *Experience of Creativity Questionnaire;* FFMQ = *Five Facet Mindfulness Questionnaire;* MTUE = *Magical Thinking + Unusual Perceptual Experiences conglomerate scores;* NJ = *Non-Judging;* NR = *Non-Reacting;* OBS = *Observing;* SuspIoR = *Suspiciousness + Ideas of Reference conglomerate scores.*

Table A.5. The results of the independent *t*-tests for the differences in ECQ Part A & B factor scores between the subsamples who reported being regularly engaged in creative activity (either as hobby, study, or profession) and those who did not.

	Creatively Active (n = 137)	**Not Creatively Active** (n = 205)	***t*-statistic**	**Cohen's *d***
	Mean (SD)	**Mean (SD)**	***p*< .001**	
ECQ Part A Factor				
Distinct Experience	28.76 (7.30)	23.76 (7.29)	6.04	.69
Anxiety	21.45 (5.80)	18.45 (5.46)	4.86	.53
Absorption	37.93 (6.76)	31.78 (8.69)	7.35	.79
Power/Pleasure	40.55 (7.43)	35.50 (7.70)	6.03	.75
Clarity/Preparation	13.92 (2.86)	12.60 (3.36)	3.78	.42
ECQ Part B Factor				
Transformation	26.61 (5.42)	23.06 (6.19)	5.47	.61
Centrality	30.36 (7.40)	24.63 (7.05)	7.21	.79
Beyond the Personal	9.92 (2.79)	7.60 (3.03)	7.19	.77

Table A.6. The results of the independent *t*-tests for the differences in SPQ scores between the subsamples who reported being regularly engaged in creative activity (either as hobby, study, or profession) and those who did not.

	Creatively Active (n = 137)	**Not Creatively Active** (n = 205)	***t*-statistic**	**Cohen's *d***
	Mean (SD)	**Mean (SD)**		
SPQ Total	22.04 (12.14)	19.66 (13.63)	1.65	.18
SPQ Positive Schizotypy Subscale				
Odd Beliefs/Magical Thinking	1.34 (1.59)	.75 (1.17)	3.72***	.42
Unusual Perceptual Experiences	2.13 (2.07)	1.68 (1.80)	2.09*	.23
Ideas of Reference	2.93 (2.47)	2.29 (2.42)	2.36*	.26
Suspiciousness	2.37 (2.20)	2.26 (2.27)	.459	.05
Total Positive Schizotypy	8.77 (6.22)	6.98 (6.12)	2.64**	.29

*p<.05, ** p<.01, *** p<.001

Fig. A.1. The diagram of correlations between: a) SPQ positive schizotypy subscales and ECQ factors; b) SPQ positive schizotypy subscales and FFMQ facets; and c) FFMQ facets of the and ECQ factors.

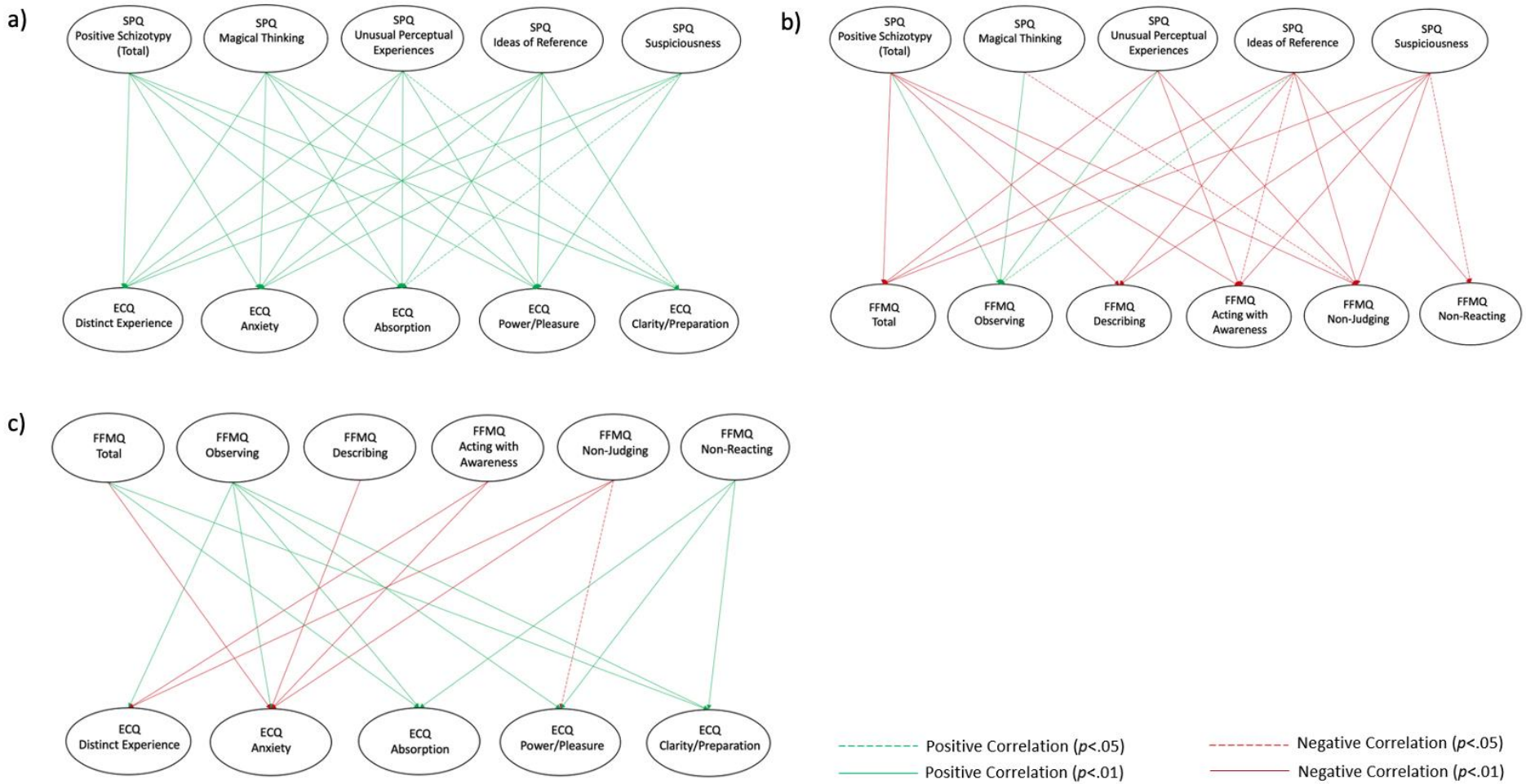

Fig. A.2. Scatter plots of the raw data demonstrating significant interactions between conglomerate scores for *Magical Thinking + Unusual Perceptual Experiences* (*MTUE*) and FFMQ facets in predicting ECQ factor scores: a) *Anxiety*, b) *Clarity/Preparation;* c) *Power/Pleasure*; and d) conglomerate scores for *Suspiciousness + Ideas of Reference* (*SuspIoR*) and FFMQ facet *Describing* in predicting ECQ factor *Anxiety* for the sub-groups with low, mean, and high scores on the respective FFMQ facets.