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Noctcaelador and Hypomanic Tendencies: The Role of Psychological Boundaries

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Abstract
The current study examined whether psychological boundaries influence the previously observed relationship between noctcaelador, psychological attachment to the night sky, and hypomania. Participants included 172 undergraduate students who completed measures of noctcaelador, hypomanic personality, hypomanic episodes, and psychological boundaries. As hypothesized, noctcaelador was positively associated with hypomanic personality, hypomanic episodes, and thin psychological boundaries at the bivariate level. Hierarchical regression analyses indicated that while hypomanic personality initially predicted noctcaelador, this relationship was no longer significant after accounting for psychological boundaries. Thin boundaries independently predicted noctcaelador. Findings suggest that the relationship between noctcaelador and hypomanic tendencies may partly reflect broader psychological organization characterized by more permeable psychological boundaries. Implications for personality functioning, experiential openness, and future research on noctcaelador are discussed.

Keywords: Noctcaelador, Hypomania, Hypomanic Personality, Psychological Boundaries, Night Sky Watching

1. Introduction

It has been estimated that between 54.0–64.2% of adults intentionally view the night sky at least monthly [1, 2]. Across millennia individuals have watched the night sky for aesthetic appreciation, meaning and perspective, and to evoke feelings of awe and connectedness with the universe [3, 4]. One variable that has been studied in relation to interest in the night sky is noctcaelador.

Noctcaelador is a psychological construct describing interest in and psychological attachment to the night sky [5]. Though quantitatively identified and validated [6, 7], noctcaelador also has been observed using qualitative approaches [4, 8]. Previous research indicates that noctcaelador is associated with what might be described as a combination of stimulation pursuit and nonordinary mental experiences and characteristics. The former includes findings of associations between noctcaelador and sensation seeking [9], enjoyment and use of effortful cognition [10, 11], curiosity about external sensory stimuli [12], reading for pleasure [13], seeking out astronomy information [14], artistic and intellectual leisure interests [15], and pursuit of astro-tourism [16]. Regarding nonordinary experiences and characteristics, noctcaelador is related to unusual sensory experiences [17], non-material beliefs [18], an ability to become deeply absorbed in experiences [19], and creativity [20].

Several correlates of noctcaelador might be ascribed to openness to experience of the big five model of personality [21]. Indeed, noctcaelador is related to openness, but only moderately suggesting non-redundancy of these concepts [22]. Also, while noctcaelador correlates with frequency and duration of night sky watching occurrences [2], it was unrelated to Bortle scores, a measure of light pollution where one lives [23], suggesting regular availability of the starry sky for viewing is not required for feelings of connection with it.

One theoretical model of noctcaelador asserts that outside of night sky watching opportunities, individuals' self- structure may increase the likelihood of developing noctcaelador. Specifically, the model proposes that individuals with a relatively permeable psychological organization who experience hypnotic-like calmness when viewing the night sky might begin to experience it as a stable attachment object that facilitates coping and feelings of "wholeness" [19, 24]. On the one hand this implies feelings of a lack of calmness or meaning that is modulated by the night sky [24, 25]. However, this has not been examined. On the other hand, a psychological mechanism may partly explain why some individuals can have reactions to simulated starry skies in addition to direct physical exposure [26, 27].

Of interest for the psychology of noctcaelador, two recent studies reported that noctcaelador was related to hypomanic experiences [17, 28]. Hypomania can be described as a syndrome reflecting experiences of elevated energy and activity, mood and cognition, and goal pursuit [29, 30]. In some cases, hypomania and more severe manic episodes can be diagnostic aspects of bipolar disorders [31]. Yet for others, there is evidence that hypomanic experiences exist on a continuum from subclinical heightened positive emotionality and confidence to symptoms of clinical mania [32]. This does not diminish the finding that for some individuals even nonclinical levels of hypomania are longitudinally predictive of severe mental illness [33]. Among nonclinical samples, hypomania episodes relate to several indices of psychological distress such as interpersonal sensitivity, anxiety, and suspiciousness [34], as well as more adaptive functioning such as creativity, endurance, and social skills [35, 36]. Hypomania is related to less self-concept clarity, suggesting possible influences of psychological organization [37].

A distinction has been made between hypomanic episodes, which may be shorter duration occurrences, and hypomanic personality style, which indicates underlying tendencies toward hypomania, though the two are strongly related [38]. Hypomanic personality is similar to the hyperthymic temperament which is associated with high energy, confidence, optimism, and productivity [39]. Consistent with hypomanic episodes, individuals with more hypomanic personality traits report a tendency towards divergent thinking, extraversion, and openness to experience [40]. They also tend to have dispositional irrational positive beliefs about themselves and to overgeneralize successes [41].

Most recent investigations of hypomania etiology focus on neurobiology [30, 33]. Nevertheless, other researchers have put forth psychological understandings of hypomania personality. In one conceptualization, more hypomanic individuals are thought to have a tendency towards experiencing self-fragmentation (e.g., feelings of confusion, strong affect, and psychotic experiences) when primary defenses of denial and distraction fail [42].

As can be gleaned from the above, psychological models of both noctcaelador and hypomania have relied partly on psychological organization as foundations. As such, the relationship between hypomanic tendencies and noctcaelador may be tied to psychological organization. While psychological organization has been conceptualized using several approaches, generally, it involves the degree to which experiences, beliefs, and expectations are integrated, organized, and receptivity to new information [43]. While this perspective overlaps with psychodynamic notions of psychic structure, the current study emphasizes broader psychological organization involving the integration, organization, and permeability of psychological experience [44].

One approach to operationalize psychological organization is Hartmann's concept of psychological boundaries [45, 46]. Psychological boundaries describe demarcations between psychological functions and experiences such as being awake and asleep and between memories and current experience. Individuals are thought to have a continuum of this separateness ranging from clear distinctions, i.e., "thick" boundaries, to less separation, i.e., "thin" boundaries [47]. Thin boundaries allow unintegrated mental material to cross into awareness, which facilitates creativity, unexpected emotion (positive and negative), and memories [46]. Empirically, both noctcaelador and hypomania have been correlated with measures of thin psychological boundaries [24, 48].

The purpose of the current study was to investigate if the previously observed correlation between noctcaelador and hypomania [17, 34] might be influenced by psychological boundaries. Based on the above, it was hypothesized that 1) noctcaelador would significantly, positively correlate with hypomanic episodes, hypomanic personality, and thin psychological boundaries and 2) after accounting for boundaries, noctcaelador and hypomanic episodes and hypomanic personality would no longer be significantly related.

2. Methods

2.1 Participants and Procedure

Participants included a convenience sample of 172 adults (129 women, 43 men) drawn from an undergraduate psychology student participants pool. The average age of the sample was 19.74 years (SD = 4.10) ranging from 18-45. For self-reported race/ethnicity, the largest proportion of participants selected Latinx (n = 85, 49.7%), followed by White/non-Hispanic participants (n = 36, 21.1%), African American/Black (n = 11, 6.4%), Asian (n = 10, 5.8%), and Native American (n = 2, 1.2%). Additionally, 10 participants (5.8%) selected "Prefer not to say" while 17 identified themselves as "Other" (9.9%). One response was missing (0.6%).

Data was collected as part of a larger study on personality. Informed consent was obtained prior to participation. Data was collected using a secure online platform that allowed for privacy of responses. Participants were informed they could stop participation at any time. There were no time limits for survey completion. Nominal course credit was provided for participation.

2.2 Measures

2.2.1 Noctcaelador

The 4-item version of the Noctcaelador Inventory [19] was used to assess psychological attachment to the night sky, e.g., "Having time to look at the night sky is important to me," using a 1 (Strongly disagree) to 5 (Strongly agree) scale. Higher total scores indicated more noctcaelador. Validity support, 1-month retest reliability of 0.81, and coefficient alpha reliability of 0.87 have been reported [19].

2.2.2 Hypomanic Personality

The 20-item version [49] of Eckblad and Chapman's [38] Hypomanic Personality Scale was used to assess hypomanic personality tendencies, e.g., "I often feel excited and happy for no apparent reason." The original measure uses a "true" or "not true" response format. To increase variance, participants in the current study were asked to endorse how much each item was true for them using a 0 (Strongly disagree) to 4 (Strongly agree) scale. Higher total scores indicated more hypomanic personality characteristics. Validity support and a coefficient alpha reliability of 0.80 have been reported [49].

2.2.3 Hypomania Episodes

The 9-item mania subscale of the Affective Self Rating Scale [50] was used to assess symptoms of hypomanic episodes, e.g., "That your thoughts raced." Participants were asked to respond if there had ever been a period in their lives in which they were not their usual self and experienced

each symptom. Participants responded using a 0 (Not at all) to 4 (Very much) scale. Higher total scores indicated more experiences of hypomanic episodes. Validity support and coefficient alpha reliability of 0.91 have been reported [50].

2.2.4 Psychological Boundaries

The 13-item Boundaries Questionnaire-13 [51] was used to assess psychological boundaries, e.g., "My feelings blend into one another." This version of the scale is an abbreviation of longer versions (46,52). Participants responded to each item using a 0 (Strongly disagree) to 4 (Strongly agree) scale. Higher total scores indicated thinner psychological boundaries. Validity support and a coefficient alpha reliability of 0.77 have been reported [51, 53].

2.3 Statistical Analyses

SPSS v. 30 for Windows (IBM Corp., Armonk, N.Y., USA) was used for statistical analyses. Pearson product moment correlation coefficients were calculated to examine relationships between variables. A hierarchical linear regression was calculated using noctcaelador as the criterion. Hypomanic episodes and hypomanic personality were entered simultaneously on Step 1. On Step 2 psychological boundaries were added. Correlation coefficients and standardized betas were interpreted as small, medium, or large if they reached .10, .30, and .50, respectively [54]. Findings were considered significant if $p <$ .050 (two-tailed).

3. Results

Scale descriptive statistics are reported in Table 1. Measures had adequate coefficient alpha internal consistency reliability [55]. Skewness and kurtosis indicated relatively normal distributions, i.e. ≤ -0.61 [56]. All measures had medium-to-large significant positive correlations (Table 1). Hypomanic personality and hypomanic episodes had a very large correlation coefficient, sharing nearly half their variance.

Table 1: Scale descriptive statistics and bivariate correlations

S. No	Variable	1	2	3	M	SD	α
1	Noctcaelador	1.00			11.17	4.30	.902
2	Hypomanic personality	0.38	1.00		42.85	12.17	.855
3	Hypomanic episodes	0.34	0.70	1.00	17.31	7.69	.846
4	Boundaries	0.43	0.64	0.52	26.46	9.36	.818
Note: N = 172. All correlations significant at p < .01.							

Regression results are presented in Table 2. On Step 1, hypomanic personality and hypomanic episodes accounted for a significant 15.8% of the variance in noctcaelador. However, only hypomanic personality was independently related to noctcaelador. On Step 2, boundaries accounted for a significant 5.0% of additional variance in noctcaelador. On this step only boundaries accounted for significant independent variance in noctcaelador: hypomanic personality was no longer significant. For both models Variable Inflation Factors (VIFs) were below 2.5, indicating multicollinearity was not a problem [57].

Table 2: Linear regression models predicting noctcaelador

	Step 1			Step 2		
Variable	β	t	p	β	t	p
Hypomanic personality	.28	2.82	.005	.12	1.12	.265
Hypomanic episodes	.15	1.50	.136	.11	1.09	.278
Boundaries				.29	3.27	.001
	ΔR^2 = .158, F = 15.83, p < .001			ΔR^2 = .050, F = 10.62, p = .001		

An exploratory simultaneous regression found that hypomanic episodes and hypomanic personality predicted 41.2% (adj. R^2), F = 61.03, p < .001, of the variance in psychological boundaries. Hypomanic personality, β = .54, p < .001, but not hypomanic episodes, β = .14, p = .082, significantly independently predicted psychological boundaries.

4. Discussion

The results of this study supported the hypotheses. While noctcaelador was significantly correlated with hypomania, this largely was influenced by psychological boundaries. The current study replicated previous findings that noctcaelador was related to hypomania [17, 28] and psychological boundaries [24] and hypomania were related to thin boundaries [48]. Regression results in the current study extended previous findings by indicating that hypomanic personality traits were more related to noctcaelador than were hypomanic episodes. This suggests underlying hypomanic tendencies may be related to noctcaelador rather than hypomanic clinical syndromes. This is also supportive of previous assertions that noctcaelador is not indicative of psychopathology but rather personality configuration [19]. Similarly, these findings also are consistent with the suggestion that levels of subclinical hypomanic traits exist on a continuum [32]. Of note, the exploratory regression suggests that hypomanic personality rather than hypomanic episodes are more related to psychological boundaries.

The current results characterize both individuals with hypomanic personality traits and noctcaelador as having thinner psychological boundaries. Given the current findings, it appears that while individuals with hypomanic personality traits may have more interest in and attachment to the night sky, this may partly be due to more permeable psychological organization. This may partly occur through hypomanic-associated elevations of active curiosity and orientation toward aesthetically complex stimuli [12, 15, 20]. Moreover, thinner boundaries may increase openness to activities and experiences that fit their value systems and provide spiritual meaning [25, 44]. The current findings and this interpretation are consistent with the psychological organization model of noctcaelador [19]. The model supposes that the night sky becomes a stable attachment object for individuals with permeable psychological organization. Given this, it might be relevant that thin boundaries have been related to insecure attachment styles [58]. It would be interesting to investigate if noctcaelador mediates the relationship between boundaries and attachment style.

Though the current study took a psychological organization approach to understanding the relationship between noctcaelador and hypomania, the findings also might partly be explained by neurobiological mechanisms. For instance, hypomanic activity may involve genetic and neural mechanisms [59]. Similarly, Hartmann [46] speculates that thinner boundaries might involve complex connections of neural structures. In terms of personality and brain structures, thin boundaries have been associated with self-report measures of temporal lobe and limbic lability [60]. This is consistent with theories involving temporolimbic excitability which may produce experiences similar to those associated with thin boundaries [61]. Somewhat relatedly, noctcaelador has been related to inconsistent handedness [62], which may also imply complex cortical connections [63]. Taken together, it might be that noctcaelador's relationship with thin boundaries denotes elements of neural connectedness and excitability. As of now this remains speculative. Additional research is needed to examine this possibility.

Some aspects of the current findings might also overlap conceptually with openness to experience, particularly characteristics involving aesthetic engagement, cognitive exploration, and receptivity to unusual experiences. However, previous findings indicating only moderate associations between openness and noctcaelador [15, 22] suggest noctcaelador may represent a more specific configuration of experiential, emotional, and symbolic engagement rather than a simple manifestation of openness alone. Nevertheless, future studies of noctcaelador might include a measure of openness within multivariate models to control possible spurious influences.

The current research has limitations which should be acknowledged before generalizing the results. For example, the utilization of a convenience sample of predominately female, Latinx undergraduate students may not allow generalization to other populations. Further, the utilization of relatively brief self-report instruments completed at one point in time may limit the findings. Also, possible response biases such as impression management, exaggeration, and guarded protection of self-concept were not considered and thus may have influenced the findings [64, 65]. Further, the cross-sectional nature of the study does not allow assumption of causal relationships. For instance, it is not yet established that thin boundaries influence hypomanic personality and noctcaelador, or vice versa. It should also be noted that because noctcaelador remains an emerging construct, much of the existing empirical literature originates from the initial research program introducing the construct. Additional independent replication studies and extensions, such as the night sky connectedness concept [23], would strengthen confidence in the broader generalizability and stability of the findings.

Future research is needed to replicate the current study by using larger, more diverse samples. More sophisticated methodologies, such as longitudinal designs, should be implemented to allow identification of directionality. It might also be useful to include other measurement approaches such as prospective behavioral indices of night sky watching and experience sampling to provide a more nuanced understanding of how these concepts relate. As noted above, additional study might also extend these results by including measures of openness, attachment style, and temporolimbic functioning to understand the link between noctcaelador and boundaries.

5. Conclusion

In conclusion, the current study attempted to understand the previously observed relationship between noctcaelador and hypomania. Bivariate correlations replicated relationships between noctcaelador, thin boundaries, and hypomania. Regression findings revealed that while hypomanic personality traits and subclinical hypomanic episodes were strongly related, hypomanic personality better predicted both thin boundaries and noctcaelador. Further, the relationship between hypomanic personality and noctcaelador largely was influenced by variance attributable to thin psychological boundaries. Additional study is needed to replicate and extend these findings using more sophisticated methodology and larger samples.

6. References

1. Mace BL, McDaniel J. Visitor evaluation of night sky interpretation in Bryce Canyon National Park and Cedar Breaks National Monument. J Interpret Res. 2013; 18(1):39-57. Doi: 10.1177/10925872130180010
2. Kelly WE, Kelly KE, Batey J. Frequency of college students' night sky watching behaviors. Coll Stud J. 2006; 40(1):166-168.
3. Silvia PJ, Fayn K, Nusbaum EC, Beaty RE. Openness to experience and awe in response to nature and music: Personality and profound aesthetic experiences. Psychol Aesthet Creat Arts. 2015; 9(4):376-384. Doi: 10.1037/aca0000028
4. McNiven HB. An exploration into 'noctcaelador' in young people of Generation Z [thesis] Lampeter, Wales UK: University of Wales Trinity Saint David, 2025.
5. Kelly WE. Night sky watching attitudes among college students: A preliminary investigation. Coll Stud J. 2003; 37(2):194-196.
6. Kelly WE. Evidence of the existence of noctcaelador across three measures: A factor analytic study. J Instr Psychol. 2006; 33(4):261-262.
7. Batey J, Kelly WE. Criterion group validity of the Noctcaelador Inventory: Differences between astronomical society members and controls. Individ Differ Res. 2005; 3(3):200-203. Doi: 10.65030/idr.03020
8. Blair A. An exploration of the role that the night sky plays in the lives of the dark sky island community of Sark. J Skyscape Archaeol. 2018; 3(2):236-252. Doi: 10.1558/jsa.34689
9. Kelly W. Getting a thrill from the night-sky: The relationship between sensation seeking and noctcaelador. Psychol J. 2007; 4(1):40-46.
10. Kelly WE. Some cognitive characteristics of night sky watchers: Correlations between social problem-solving, need for cognition, and noctcaelador. Educ. 2005; 126(2):328-333.
11. Idris M. Differences in the relationship between viewing the horizon at night and coping mechanisms. Arab Stud Psychol. 2018; 17(3):598-637. Doi: 10.21608/assj.2018.91892
12. Kelly WE, Daughtry D. The case of curiosity and the night sky: Relationship between noctcaelador and three forms of curiosity. Educ. 2016; 137(2):204-208.

13. Kelly WE, Daughtry D. Academic orientation, academic achievement, and noctcaelador: Does interest in night-sky watching correlate with students' approach to the Academic environment? Educ. 2007; 128(2):274-281.
14. Daughtry D. What drives interest in astronomy content? Evidence for the primacy of domain specific interest over personality. J Int Scholar. 2026; 1(1):e011005. Doi: 10.65030/jis.011005
15. Kelly WE. Interests under the open mind and the open sky: Noctcaelador, the big five, and leisure interests. Individ Differ Res. 2021; 19:e19006. Doi: 10.65030/idr.19006
16. Tapada A, Da Encarnação Marques CS, Peixeira Marques C, Costa C. Astrotourism: Image and visit intention in low-density territories. The case of the inland north of Portugal. Portug J Reg Stud. 2023; 66:117-132. Doi: 10.59072/rper.vi66.33
17. Kelly WE. Associations of maladaptive psychological processes and noctcaelador in a university student sample: A follow-up study. Int J Adv Multidisc Res Stud. 2025; 5(5):315-321. Doi: 10.62225/2583049X.2025.5.5.4914
18. Kelly WE, Daughtry D. Relationship between magical ideation and noctcaelador. Percept Mot Skills. 2005; 101(2):373-374. Doi: 10.2466/pms.101.2.373-374
19. Kelly WE. "Hypnotic" attachment to the night sky: Theoretical considerations and an abbreviated measure of noctcaelador. Sleep Hypn. 2019; 21(2):147-157. Doi: 10.5350/Sleep.Hypn.2019.21.0183
20. Kelly WE, Kelly KE. Creativity as a bridge between temperament and attachment to the night sky (noctcaelador). Int J Multidiscip Res. 2026; 8(1):65598. Doi: 10.36948/ijfmr.2026.v08i01.65598
21. Digman JM. Personality structure: Emergence of the five-factor model. Annu Rev Psychol. 1990; 41:417-440. Doi: 10.1146/annurev.ps.41.020190.002221
22. Kelly WE. The personality of night sky watchers: Relationships of noctcaelador with the big five, Eysenck's PEN model, and Jung's typologies. North Am J Psychol. 2025; 27(2):289-300.
23. Barnes C, Passmore HA. Development and testing of the Night Sky Connectedness Index (NSCI). J Envir Psychol. 2024; 93:102198. Doi: 10.1016/j.jenvp.2023.102198
24. Kelly WE, Daughtry D. Psychological boundaries, coping, and noctcaelador: Examining a psychic Structure model. Individ Differ Res. 2025; 23:e23006. Doi: 10.65030/idr.23006
25. Kelly WE. The night sky and religious-spiritual orientation: Associations of noctcaelador with existential well-being, God image, and religious orientation. J Int Scholar. 2026; 1(2):e011006. Doi: 10.65030/jis.011006
26. Kaufman JA, Jensen JA, LaCoursiere T, Jacobson R. Meaning under the dome: A novel approach to create meaning in life with guided visual imagery. Planetarian. 2026; 55(1):10-13.
27. Tanaka M, Otani K, Horiuchi T. Relationship between darkness and healing of night sky in planetarium. Int J Environ Res Public Health. 2025; 22(4):569. Doi: 10.3390/ijerph22040569
28. Kelly WE. Relationships of noctcaelador with measures of psychological dysfunction: The MMPI-2 and cognitive ability. Int J Adv Multidisc Res Stud. 2025; 5(4):390-396. Doi: 10.62225/2583049X.2025.5.4.4606
29. Angst J, Adolfsson R, Benazzi F, Gamma A, Hantouche E, Meyer TD, *et al*. The HCL-32: Towards a self-assessment tool for hypomanic symptoms in outpatients. J Affect Disord. 2005; 88(2):217-233. Doi: 10.1016/j.jad.2005.05.011
30. Johnson SL, Edge MD, Holmes MK, Carver CS. The behavioral activation system and mania. Annu Rev Clin Psychol. 2012; 8:243-267. Doi: 10.1146/annurev-clinpsy-032511-14314
31. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed, text rev.: American Psychiatric Association, 2022.
32. Angst J, Gamma A, Benazzi F, Ajdacic V, Eich D, Rössler W. Toward a re-definition of subthreshold bipolarity: Epidemiology and proposed criteria for bipolar-II, minor bipolar disorders and hypomania. J Affect Disord. 2003; 73(1-2):133-146. Doi: 10.1016/s0165-0327(02)00322-1
33. Hosang GM, Martini MI, Ronald A, Larsson H, Lundström S, Lichtenstein P, *et al*. Subclinical hypomania, psychiatric and neurodevelopmental diagnoses: Phenotypic and aetiological overlap. J Child Psychol Psychiatry. 2026; 67(5):686-695. Doi: 10.1111/jcpp.70045
34. Kelly WE, Lutz D. Concurrent criterion validity of the Ausburg Multidimensional Personality Instrument (AMPI) clinical scales among college students. Coll Stud J. 2014; 48(3):211-216.
35. Tusconi M, Dursun SM, Cossu G, Carta MG. Bipolar disorder in an evolutionary framework: Rethinking adaptation, vulnerability, and stigma. Front Psychiatry. 2026; 17:1764726. Doi: 10.3389/fpsyt.2026.1764726
36. Andreasen NC. Creativity and mental illness: Prevalence rates in writers and their first-degree relatives. Am J Psychiatry. 1987; 144(10):1288-1292. Doi: 10.1176/ajp.144.10.1288
37. Sharratt L, Ridout N. Direct and indirect effects of childhood adversity on psychopathology: Investigating parallel mediation via self-concept clarity, self-esteem and intolerance of uncertainty. Br J Clin Psychol. 2025; 64(2):539-552. Doi: 10.1111/bjc.1252
38. Eckblad M, Chapman LJ. Development and validation of a scale for hypomanic personality. J Abnorm Psychol. 1986; 95(3):214-222. Doi: 10.1037//0021-843x.95.3.214
39. Ghaemi SN, Vohringer PA. Athanasios Koukopoulos' psychiatry: The primacy of mania and the limits of antidepressants. Curr Neuropharmacol. 2017; 15(3):402-408. Doi: 10.2174/1570159X14666160621113432
40. Furnham A, Batey M, Anand K, Manfield J. Personality, hypomania, intelligence and creativity. Pers Individ Dif. 2008; 44(5):1060-1069. Doi: 10.1016/j.paid.2007.10.035
41. Tiba AI, Trip S, Bora CH, Drugas M, Borz F, Miclăuș DC, *et al*. Positive irrational beliefs are associated with hypomanic personality. Front Psychol. 2023; 14:1053486. Doi: 10.3389/fpsyg.2023.1053486
42. McWilliams N. Psychoanalytic diagnosis: Understanding personality structure in the clinical process, 2nd ed.: Guilford Press, 2011.

43. Showers CJ, Zeigler-Hill V. Compartmentalization and integration: The evaluative organization of contextualized selves. J Pers. 2007; 75(6):1181-1204. Doi: 10.1111/j.1467-6494.2007.00472.x
44. McCrae RR. Openness to Experience: Expanding the boundaries of Factor V. Eur J Pers. 1994; 8(4):251-272. Doi: 10.1002/per.2410080404
45. Hartmann E. The nightmare: Basic Books, 1984.
46. Hartmann E. Boundaries in the mind: A new psychology of personality: Basic Books, 1991.
47. Hartmann E. The concept of boundaries in counselling and psychotherapy. Br J Guid Couns. 1997; 25(2):147-162.
48. Harrison RH, Hartmann E, Bevis J. The Boundary Questionnaire: Its preliminary reliability and validity. Imagin Cogn Pers. 2005; 25(4):355-382. Doi: 10.2190/8120-6340-T808-7001
49. Meads DM, Bentall RP. Rasch analysis and item reduction of the hypomanic personality scale. Pers Individ Dif. 2008; 44(8):1772-1783. Doi: 10.1016/j.paid.2008.02.009
50. Adler M, Liberg B, Andersson S, Isacsson G, Hetta J. Development and validation of the Affective Self Rating Scale for manic, depressive, and mixed affective states. Nord J Psychiatry. 2008; 62(2):130-135. Doi: 10.1080/08039480801960354
51. Mathe JR, Kelly WE. An exploratory factor analysis on the Boundary Questionnaire 18: Insights for future research. Imagin Cogn Pers. 2022; 42(1):77-86. Doi: 10.1177/02762366221082508
52. Kunzendorf RG, Hartmann E, Cohen R, Cutler J. Bizarreness of the dreams and daydreams reported by individuals with thin and thick boundaries. Dreaming. 1997; 7(4):265-271. Doi: 10.1037/h0094482
53. Mathe JR, Kelly WE. Mental boundaries relationship with self-esteem and social support: New findings for mental boundaries research. Imagin Cogn Pers. 2023; 43(1):29-41. Doi: 10.1177/02762366231158274
54. Cohen J. Statistical power analysis for the behavioral sciences, 2nd ed: Erlbaum, 1988.
55. Morera OF, Stokes SM. Coefficient α as a measure of test score reliability: Review of 3 popular misconceptions. Am J Public Health. 2016; 106(3):458-461. Doi: 10.2105/AJPH.2015.302993
56. Munro B. Statistical methods for health care research: Lippincott, 2001.
57. Kim JH. Multicollinearity and misleading statistical results. Korean J Anesthesiol. 2019; 72(6):558-569. Doi: 10.4097/kja.1972087
58. Zborowski MJ, Hartmann E, Newsom MA, Banar M. The Hartman boundary questionnaire: Two studies examining personality correlates and interpersonal behavior. Imagin Cogn Pers. 2003-2004; 23(1):45-62. Doi: 10.2190/TPMB-PE1A-L6UU-1JUL
59. Murray RM, Sham P, Van OSJ, Zanelli J, Cannon M, McDonald C. A developmental model for similarities and dissimilarities between schizophrenia and bipolar disorder. Schizophr Res. 2004; 71(2-3):405-416. Doi: 10.1016/j.schres.2004.03.002
60. Thalbourne MA, Maltby J. Transliminality, thin boundaries, unusual experiences, and temporal lobe lability. Pers Individ Dif. 2008; 44(7):1617-1623. Doi: 10.1016/j.paid.2008.01.022
61. Makarec K, Persinger MA. Electroencephalographic validation of a temporal lobe signs inventory in a normal population. J Res Pers. 1990; 24(3):323-337. Doi: 10.1016/0092-6566(90)90024-Z
62. Kelly WE. Pick a hand, any hand: Mixed-handedness and night sky watching in a college student sample. Coll Stud J. 2009; 43(1):228-233.
63. Prichard E, Propper RE, Christman SD. Degree of handedness, but not direction, is a systematic predictor of cognitive performance. Front Psychol. 2013; 4:9. Doi: 10.3389/fpsyg.2013.00009
64. Rohling ML, Larrabee GJ, Greiffenstein MF, Ben-Porath YF, Lees-Haley P, Green P, *et al*. A misleading review of response bias: Comment on McGrath, Mitchell, Kim, and Hough. Psychol Bull. 2010; 137(4):708-715. Doi: 10.1037/a0023327
65. Daughtry D, Stephens JJ. Statistical relationships of the Ausburg Multidimensional Personality Instrument (AMPI) validity scales with those of the MMPI-2. Individ Differ Res. 2018; 16:e16004. Doi: 10.65030/idr.16004