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Freudian Dream Theory, Celebrity Admiration, and Intuitive Thought

Joshua L. Williams[1], Carlota Cruces Serrano[1], Nancy G. McCarley[1] & Jonathan E. Roberts[1]

[1] Department of Psychology, Georgia Southern University, Savannah, Georgia, USA

Correspondence: Joshua L. Williams, Department of Psychology, Georgia Southern University, Savannah, Georgia, USA.

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Abstract

We sought to replicate and extend previous work to examine the relationship between individuals' belief in four common dream perspectives, including the Freudian, celebrity admiration, and rational and experiential abilities. We administered a short dream theories questionnaire, the *Celebrity Attitude Scale* (*CAS*), and the *Rational-Experiential Inventory* (*REI-40*) to 122 university students. Key results indicate strong support for the Freudian perspective on dreams with individuals who support that perspective tending to operate more experientially rather than rationally. We did not discover strong relationships between the *CAS* and the dreams theories questionnaire nor the *REI-40*. Results are discussed in terms of how the current results fit in the recent empirical literature and how they forge new pathways for future research in the area of belief in pseudoscientific perspectives and parasocial relationships.

Keywords: Freud, dreams, rationality, experientiality, celebrity attitude

1. Freudian Dream Theory, Celebrity Admiration, and Intuitive Thought

Sigmund Freud is one of the most recognizable names in psychology (Baumeister, 2005). However, his work has been criticized for quite some time, especially in terms of not being falsifiable, and thus, not scientific (Popper, 1962; Stanovich, 2019). Despite such criticism, Freud and his ideas pervade society, especially his perspective on the meaning of dreams in which he proposed that dreams contain hidden, significant, and meaningful information about individuals' lives. Among four key dream theory perspectives [Freudian (Freud, 1955), problem-solving (Cartwright, 1974), learning (Crick & Mitchison, 1983), activation-synthesis (Hobson & McCarley, 1977)], Freud's tends to be considered the least scientific in terms of empirical research and support, with many classifying it as more pseudoscientific (Lilienfeld et al., 2015; Popper, 1962; Stanovich, 2019).

Morewedge and Norton (2009) explored individuals' support of the four key dream theories and how belief in such theories impacted their attribution of meaningfulness to positive and negative dreams about their friends, and their feelings toward said friends. They found that participants overwhelmingly selected the Freudian perspective as the perspective most likely to be correct, which related to participants attributing greater meaning to the dream scenario.

Williams et al. (2020) replicated and extended Morewedge and Norton (2009) by exploring individuals' support of the same four key dream theories and how belief in them impacted their attribution of meaningfulness to positive and negative dreams about their *favorite celebrity*. In looking at the connection to favorite celebrities, they moved the research beyond social relationships to parasocial relationships. Williams et al. (2020) replicated the finding that participants overwhelmingly selected the Freudian perspective as the perspective most likely to be correct. Further, those who supported the Freudian perspective attributed more meaningfulness to the dream scenario which involved their favorite celebrity, and they also displayed a stronger attachment to their favorite celebrity, as measured by the *Celebrity Attitude Scale* (*CAS*; McCutcheon et al., 2002), indicative of a potentially unhealthy perceived relationship with their favorite celebrity.

Williams et al. (2021) replicated the findings of Williams et al. (2020) and extended that work to examine one potential reason *why* individuals tend to select the Freudian dream theory as the one most likely to be correct: name recognition. In the study they tested to see if presence of Freud's name drove selection of the theory more so than if his name was absent. Williams et al. (2021) found that regardless of whether Freud's name was present, participants selected the Freudian dream perspective to be the theory most likely to be correct. However, the researchers did replicate the finding that those who believe in the Freudian perspective tend to have an unhealthier perceived connection with their favorite celebrity.

Williams et al. (2021) did not find that name recognition drove selection of the Freudian dream perspective as the perspective most likely to be correct. Thus, most individuals tend to believe that dreams contain hidden and meaningful information despite lacking sufficient empirical evidence of this theory. Further, individuals who supported the Freudian perspective also tended to report a more unrealistic perceived connection with their favorite celebrity. Williams et al. (2021) proposed that a potential underlying reason for belief in the Freudian perspective and unrealistic attachment to their favorite celebrity could be that these individuals operate on a more intuitive-experiential, rather than analytical-rational, way of interpreting information. Rational ability is the ability to think logically and analytically about information while experiential ability is the ability to operate on feelings and intuition. Levels of these abilities may be measured using the *Rational-Experiential Inventory* (*REI*; Epstein et al., 1998; Pacini & Epstein, 1999). Indeed, prior work indicates that this may be a possibility. Specifically, Blackmore (1992) and Wiseman and Watt (2006) argued that individuals who believe in pseudoscience tend to improperly link chance events in a causal fashion. In addition, Blackmore and Troscianko (1985), Bressan (2002), and Dagnall et al. (2007) stated that individuals who support pseudoscientific perspectives lack a sophisticated understanding of logic and probabilistic thinking.

2. Current Study

In this study, we examined the relationship between dream theory support, celebrity admiration, and levels of rational and experiential abilities. First, we used the same dream theory perspective descriptions and questions used in Morewedge and Norton (2009), Williams et al. (2020), and Williams et al. (2021), which allowed us to measure participants' level of agreement with each theory as well as their belief about which theory is most likely to be correct. Second, we measured participants' connection to their favorite celebrity with the *Celebrity Attitude Scale* (*CAS*; McCutcheon et al., 2002). Third, we used the *Rational-Experiential Inventory* (*REI*-40; Keaton, 2017; Pacini & Epstein, 1999) to measure rational and experiential processing.

3. Hypotheses

1) Consistent with the work of Morewedge and Norton (2009), Williams et al. (2020), and Williams et al. (2021), participants would select the Freudian dream perspective as the one most likely to be correct.
2) Consistent with the work of Williams et al. (2020) and Williams et al. (2021), participants who select the Freudian dream perspective as the one most likely to be correct would show higher scores on the *CAS*.
3) Participants who support the Freudian dream perspective would show *REI*-40 scores higher on experiential (intuitive) ability than rational (logical, analytical) ability than participants who support a non-Freudian perspective.
4) Participants who show a more problematic relationship with their favorite celebrity would show *REI*-40 scores higher on experiential (intuitive) ability than rational (logical, analytical) ability.

4. Method

4.1 Participants

After approval from our Institutional Review Board, we recruited 144 participants who were students enrolled in Introduction to Psychology at a large university in Southeast Georgia. Potential participants read a short description of the study and its procedures in our online psychology research management system (SONA), selected an available timeslot, and then completed the entire study (from consent through debriefing) fully online via Qualtrics survey software. We excluded 22 participants from final analyses for incongruent responses to two catcher questions. Thus, the final sample consisted of 122 participants (M_{age} = 19.99 years, SD_{age} = 5.34), 94 of which identified as female, 27 as male, and 1 preferred not to answer. Of the sample, one individual self-identified as American Indian or Alaska Native (0.8%), one as Asian (0.8%), 24 as Black or African American (19.7%), 9 as Hispanic, Latino, or Spanish origin (7.4%), 83 as White (68%), three as some other race, ethnicity, or origin (2.5%; answers provided: Biracial, Black/Asian, Multiracial), and one preferred not to answer (0.8%)[1].

4.2 Materials and Procedure

After potential participants accessed the Qualtrics survey, they read through the informed consent document. If they chose to participate in the study, they completed the dream theories questionnaire, on which they read brief

descriptions (23-28 words) of the four major dream theories: Freudian (F; Freud, 1955), problem solving (PS; Cartwright, 1974), learning (L; Crick & Mitchison, 1983), and activation-synthesis/by-product (BP; Hobson & McCarley, 1977). These perspectives and their descriptions matched those of Morewedge and Norton (2009) and Williams et al. (2020). After reading each description, participants rated their level of agreement with each theory on a Likert-scale prompt that ranged from 1 (Do not agree at all) to 7 (Agree completely). After reading and rating each individual theory description, participants selected the theory they believed was most likely to be correct/true and had the opportunity to provide a rationale for their selection.

Then, participants completed the 40 item *Rational-Experiential Inventory* (*REI*-40), which measures rational and experiential ability and engagement. Prior work revealed that the *REI*-40 shows strong reliability on both the rational ability items (Cronbach's alpha values typically between .80 and .85) and experiential ability items (Cronbach's alpha values typically between .77 and .80). In addition, there is evidence that the *REI*-40 has good convergent and divergent validity (Epstein & Meier, 1989; Handley et al., 2000; Pacini & Epstein, 1999).

The *REI*-40 consists of 40 prompts, on which participants report how true each statement is in relation to themselves on a Likert scale that ranges from 1 (Definitely not true of myself) to 5 (Definitely true of myself). The entire scale may be divided equally into four separate scores by averaging 10 associated items: Rational ability (*RA*), rational engagement (*RE*), experiential ability (*EA*), and experiential engagement (*EE*). Further, averaging the two rational and two experiential values provides overall rationality and experiential scores (Keaton, 2017). In this study, the Cronbach's alpha values for the total *REI*-40, *RA*, *RE*, *EA*, and *EE* were $\alpha = .85$, $\alpha = .82$, $\alpha = .85$, and $\alpha = .69$, respectively. We focused our work mainly on rational and experiential ability. In addition to the scores derived from the scale itself, we computed a standardized REI index (z – score) in a similar fashion to that of Hinojosa et al. (2003) and Williams and Corbetta (2016) in their measures of handedness and intentional hand-toy contacts, respectively. The standardized REI index combined rational and experiential ability scores into a single value such that positive values indicated rational ability scores that were higher than experiential ability scores whereas negative values indicated experiential ability scores that were higher than rational ability scores. Scores of zero indicated equivalent rational and experiential ability scores. To calculate this index for each participant, we first computed a difference score between rational and experiential ability scores. Then, we divided this difference score by the square root of the sum of rational and experiential ability scores. Within the *REI*-40, we added a catcher prompt to check for response set behavior in participants. Specifically, the prompt read, "For this prompt, please select "4" as your response." We excluded from final analyses any individual who selected a response option other than "4" on this prompt.

After completing the *REI*-40, participants named their favorite celebrity and rated their general level of interest in that celebrity using a Likert scale that ranged from 1 (Very Weak) to 7 (Very Strong). In this study, the mean general interest level reported was on the low end of the scale ($M = 3.75$, $SD = 1.49$, $Mdn = 4.00$, Minimum = 1.00, Maximum = 7.00). The celebrity they named as their favorite then served as the target celebrity for the 23-item *Celebrity Attitude Scale* (*CAS*), which allowed us to assess participants' degree of admiration toward their favorite celebrity. The *CAS* emerged in the early 2000's and has been used across many studies (Ashe & McCutcheon, 2001; Griffith et al., 2013; Maltby et al., 2002; McCutcheon et al., 2002; Williams et al., 2020; Williams et al., 2021). Prior work demonstrated that the *CAS* has good psychometric properties with Cronbach's alpha values typically between .84 and .94. In addition, Maltby et al. (2002) found the *CAS* score to reliably correlate with measures of similar concepts.

On each of the 23 items, participants rated their level of agreement with a prompt on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). The sum of responses provided a total celebrity admiration score, but the *CAS* contains measures of three separate aspects of celebrity admiration: *Entertainment-Social* (*ES*; Affinity for celebrity due to celebrity's provision of entertainment or as a way to connect with friends; 10 items), *Intense-Personal* (*IP*; May indicate a problematic level of celebrity admiration; 9 items), and *Borderline-Pathological* (*BP*; Pathological attitudes or behaviors via celebrity admiration; 4 items). In this study, the Cronbach's alpha for the total *CAS*, *ES*, *IP*, and *BP* were $\alpha = .94$, $\alpha = .90$, $\alpha = .86$, and $\alpha = .66$, respectively. To check for response set behavior on this scale, we added a catcher prompt that read, "For this prompt, please select "Disagree" as your response." We excluded from final analyses any participant that selected a response other than "Disagree" on this prompt.

Upon completion of the *CAS*, participants completed a basic demographic questionnaire and then completed the debriefing process.

5. Results

5.1 Hypothesis 1

We expected participants to select the Freudian perspective on dreams most frequently as the one likely to be true. Participants did select the Freudian (F) perspective as most likely to be true most frequently relative to the

Problem-solving (PS), Learning (L), and By-product (BP) perspectives, χ^2 (3, N = 122) = 68.885, p < .001, W = .75, see *Figure 1* (left panel). We used a Friedman test with a Bonferroni adjustment to examine the extent to which participants agreed with each theoretical perspective. Participants differed in their level of agreement with the Freudian (M = 5.13, SD = 1.35, Mean Rank = 3.00), Problem-solving (M = 4.45, SD = 1.70, Mean Rank =2.36), Learning (M = 3.97, SD = 1.53, Mean Rank = 1.91), and By-product (M = 4.93, SD = 1.40, Mean Rank = 2.73) perspectives, χ^2 (3, N = 119) = 56.723, p < .001, W = .16, see *Figure 1* (right panel). Agreement ratings with the Freudian perspective were higher than those of Problem-solving (p = .001) and Learning (p < .001). Ratings for the By-product and Problem-solving perspectives were higher than those of the Learning (p < .001, p = .04, respectively).

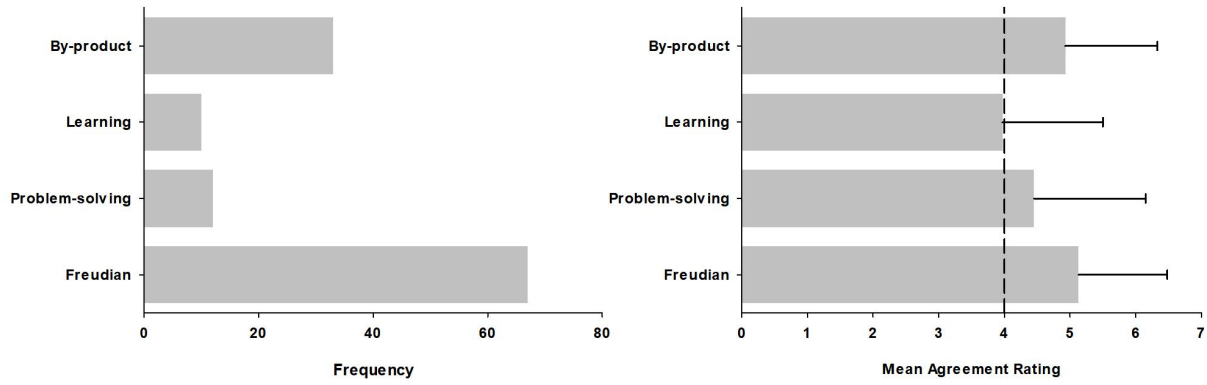

Figure 1.

Note: Left panel: Frequency of participant selections of dream perspectives selected as most likely to be correct. Right panel: Mean agreement ratings (± 1 *SD*) of participants for each dream perspective. Reference line at "4" denotes scale midpoint.

5.2 Hypothesis 2

Based on prior research, we expected participants who selected the Freudian dream perspective as the one most likely to be correct to show a greater connection to their favorite celebrity, as evidenced by higher scores on the *CAS*. However, in this study, we did not discover such a relationship (see *Table 1* for *CAS* summary statistics).

Table 1.

CAS Means (1 SD) by Dream Perspective Selected as Most Likely to be Correct

	Freudian	Problem Solving	Learning	By-product
CAS Total	48.11 (15.21)	53.50 (19.41)	50.86 (17.39)	47.80 (16.51)
CAS-ES	27.02 (8.39)	28.83 (10.65)	28.00 (10.38)	26.43 (9.02)
CAS-IP	15.37 (6.17)	17.92 (6.33)	17.71 (7.41)	15.63 (6.33)
CAS-BP	7.47 (2.12)	9.08 (4.42)	7.14 (2.12)	7.30 (2.82)

A one-way MANOVA, with the grouping variable as dream theory individuals selected as most likely to be true, revealed no significant difference between the groups on *CAS* total scores [F (3, 108) = 0.453, p = .716, η_p^2 = .01], *CAS-ES* scores [F (3, 108) = 0.232, p = .874, η_p^2 = .01], *CAS-IP* scores [F (3, 108) = 0.769, p = .514, η_p^2 = .02], nor *CAS-BP* scores [F (3, 108) = 1.107, p = .349, η_p^2 = .03].

5.3 Hypothesis 3

When incorporating *REI-40* scores, we predicted that participants who supported the Freudian dream perspective

to exhibit higher experiential (intuitive) ability scores relative to rational (logical, analytical) scores, a pattern we did not expect to see in supporters of the non-Freudian perspectives. We ran a 2 (*REI*: Experiential v. Rational) x 4 (Dream: F v. PS v. L v. BP) mixed ANOVA with *REI* as the within-subjects factor and Dream as the between-subjects factor. There was no significant effect of Dream [F (3, 110) = 0.368, p = .776, η_p^2 = .01] nor of *REI* [F (1, 110) = 0.007, p = .936, η_p^2 = .00]. There was a marginal interaction between *REI* and Dream, F (3, 110) = 2.293, p = .082, η_p^2 = .06. Pairwise comparisons with a Bonferroni adjustment revealed the major driver for the marginal interaction was within those individuals who supported the Freudian perspective; their *REI* experiential ability scores were significantly higher than their *REI* rational ability scores (p = .004, see Figure 2). We detected no other significant differences across all pairwise comparisons.

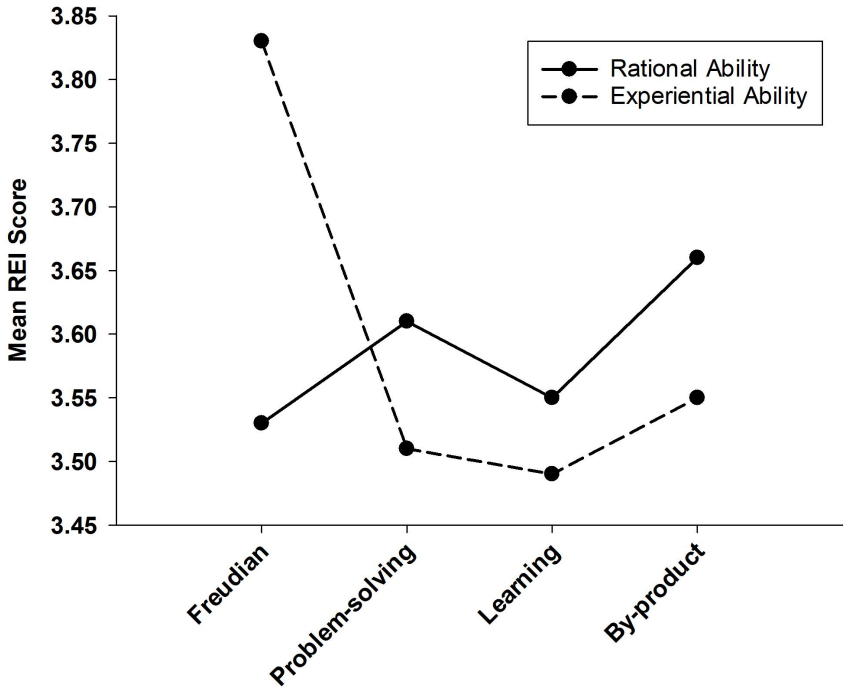

Figure 2. Means plot of rational and experiential ability scores as a function of the dream perspective individuals selected as most likely to be correct

5.4 Hypothesis 4

We expected to detect a pattern in our data such that participants who reported a stronger connection to their favorite celebrity would exhibit higher experiential ability scores than rational ability scores. For this analysis, we examined the correlation between the standardized *REI* index and *CAS* Total, *ES*, *IP*, and *BP* scores. Within this sample, we did not detect the expected pattern of correlations. Figure 3 shows the scatterplots for the relationships between the *REI* index and *CAS* scores. We detected positive, weak, but significant correlations between the *REI* index and *CAS* Total scores [r (114) = .22, p =.020] and *CAS-IP* scores [r (112) = .23, p = .015]. There was a marginally significant, positive, and weak correlation between the *REI* index and *CAS-ES* scores [r (109) = .18, p = .063]. There was no significant relationship between the *REI* index and *CAS-BP* scores [r (111) = .16, p = .102].

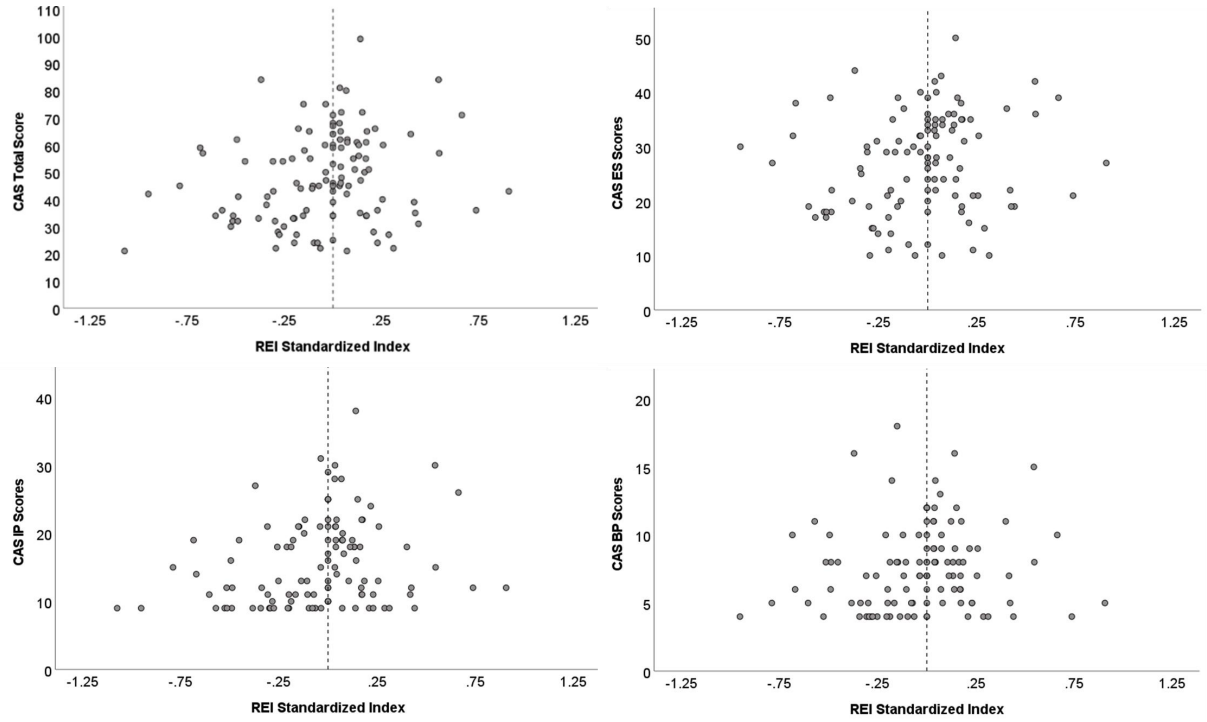

Figure 3. Scatterplots of REI standardized index and *CAS* total scores (top left), *CAS-ES* scores (top right), *CAS-IP* scores (bottom left), and *CAS-BP* scores (bottom right)

Note: Vertical reference line in each plot depicts the zero point, in which scores were equivalent on experiential (negative values) and rational (positive values) ability scores.

6. Discussion

We examined speculation put forth in Williams et al. (2021) which stated the possibility that individuals who advocate for the Freudian dream perspective as the one most likely to be correct/true, relative to three popular competing perspectives, and who are significantly attached to their favorite celebrity, may be more inclined to typically operate on experiential (intuitive) ability, rather than rational (logical, analytical), when processing information. In the course of examining the proposal of Williams et al. (2021), we tested four hypotheses.

First, we predicted that participants would select the Freudian perspective on dreams most frequently as the one most likely to be correct/true. Indeed, respondents in our study selected the Freudian perspective most frequently relative to the problem solving, learning, and by-product perspectives, which replicated the findings of Morewedge and Norton (2009), Williams et al. (2020), and Williams et al. (2021). However, a subtle difference emerged in the current study within the perspective agreement ratings. Although agreement ratings with the Freudian perspective were higher than those of the problem solving and learning perspectives, we did not find them to be significantly higher than those of the by-product perspective, as was found in Williams et al. (2020; marginal significance) and Williams et al. (2021). So, overall, individuals still believe the Freudian perspective is most likely be correct, but there seems to be some conflict within individuals between the Freudian and by-product perspectives. Such a conflict may have emerged due to an ever-increasing availability of neuroscience knowledge in society via various media and pervasive discussions within educational programming (Grospietsch & Mayer, 2019; Hopkins, 2021; Racine et al., 2010), which may have made the neuroscience-oriented by-product perspective more attractive and/or acceptable to respondents as an explanation. Such a notion may be examined experimentally over the short term via a neuroscience information exposure manipulation prior to selecting the perspective believed to correct and providing agreement ratings of the four dream perspectives, a project that is in progress in our laboratory.

Second, we predicted that participants who selected the Freudian dream perspective as the one most likely to be correct would have a greater connection to their favorite celebrity. In the current study, we did not find support for this hypothesis. We drew the prediction from the most recent work of Williams et al. (2021), in which they discovered such a relationship, but only within one subscale of the *CAS* (the *CAS-IP* subscale). In addition to the effect in Williams et al. (2021) being relatively small (η_p^2 = .03), the approach to examining the relationship between *CAS* subscales and belief in the Freudian perspective was exploratory in nature. So, it is possible that

with the smaller sample size in the current study we failed to have enough statistical power to detect such a small effect. Thus, this is an area for future investigation given the mixed results between this study and Williams et al. (2021).

Third, we expected participants who supported the Freudian dream perspective to exhibit higher experiential (intuitive) ability scores relative to rational (logical, analytical) scores. Further, we did not expect to see such a pattern within any of the non-Freudian perspectives. Our analysis revealed a marginally significant interaction between *REI* scores and dream perspective support in the expected direction (see Figure 2). Specifically, we found that individuals who selected the Freudian perspective as the one most likely to be correct tended to have higher experiential ability scores than rational ability scores. In addition, across the individuals who selected the non-Freudian perspectives as most likely to be correct we detected no differences between experiential and rational ability scores. This may have only approached significance due to the effect being within the small to medium range ($\eta_p^2 = .06$) and our sample not being as large as originally planned. However, despite the marginal significance, the trend seems to align with the suggestion proposed by Williams et al. (2021). Further, in examining the rationales provided by the respondents for selecting the Freudian perspective as the one most likely to be correct, participants largely cited personal experiences, feelings, and emotions for their selection, which aligns well with individuals high in experiential (intuitive) ability. Given that some believe Freudian perspectives to lean more toward pseudoscience (Lilienfeld et al., 2015; Popper, 1962; Stanovich, 2019), the pattern we discovered is also consistent with previous work that found individuals who were more apt to adopt pseudoscientific beliefs to demonstrate lower rational (logical, analytical) abilities, such as the improper causal linking of chance events and a general lower grasp of probabilistic thinking (Blackmore, 1992; Blackmore & Troscianko, 1985; Bressan (2002); Dagnall et al., 2007; Wiseman & Watt, 2006). As we only discovered a trend, more work is needed to replicate this finding. In addition, we believe the rationales provided by respondents may be an important mechanism in further specifying the relationship between experiential and rational abilities and belief in the Freudian perspective. In this study, we collected rationales for selections but only a small subset of these responses was usable. Current work in our laboratory is focused on the development of a reliable and valid measurement tool to collect rationales as well as a reliable rubric for analyzing them. In future studies, we expect to combine the new tool and rubric with the *REI* to further specify experiential and rational abilities as individuals evaluate information and state beliefs.

Fourth, drawing on the speculation from Williams et al. (2021), we predicted that participants who scored higher on the *CAS*, indicating a strong connection to their favorite celebrity, would exhibit higher experiential ability scores than rational ability scores. We did not find support for this prediction, and in fact, we discovered patterns in the opposite direction for *CAS* total scores and *CAS-IP* (see Figure 3). Specifically, individuals who scored higher on the *CAS* total and *CAS-IP* tended to display higher rational ability scores relevant to experiential ability scores (e.g., higher *REI* index). Despite discovering these relationships, they were weak, and thus, we maintain a great deal of caution in our interpretation. In speculating about the pattern of results we report here, if there is indeed a relationship such that individuals with a greater connection to their favorite celebrity tend to have greater rational ability than experiential ability, it is likely that we need more pieces of the puzzle to explain such a situation. For instance, maybe further specification of the higher rational ability is needed to elucidate whether or not these individuals just have a tendency to enjoy entertaining somewhat irrational ideas, such as a significant connection to their celebrity. However, this is simple speculation proposed on very weak relationships, but it nonetheless opens the door to potential avenues for research.

Despite the potentially small sample size, which likely led to some marginal effects, we replicated the work of Morewedge and Norton (2009), Williams et al. (2020), and Williams et al. (2021) and demonstrated once more that the Freudian dream perspective is alive and well. However, we also extended these studies so as to begin exploring how experientiality and rationality figure into belief in the Freudian dream perspective as well as celebrity admiration. This work has forged new pathways for empirical work that will allow for a better understanding of the larger topic of the mechanisms for how and why individuals adopt pseudoscientific beliefs and develop unrealistic parasocial attachments.

Conflict of Interest

We have no known conflict of interest to disclose.

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[1] Percentage may be greater than 100% as participants had the option to select all categories that applied to them.