

Exploring the Connections between Romantic Desire and Mental Imagery

Boran Cui^{1,a}, Yuhan Liu^{1,b}, Zhenxiong Wen^{1,c}, Weibo Zhang^{1,d,*}

¹Dalton Academy, The Affiliated High School of Peking University, Beijing, China

^acuiboran2025@i.pkuschool.edu.cn, ^bliuyuhan2025@i.pkuschool.edu.cn,

^cwenzhenxiong2024@i.pkuschool.edu.cn, ^dzhangweibo@i.pkuschool.edu.cn

*Corresponding author

Abstract: This study probes the link between romantic desire and mental imagery. Through a questionnaire involving 218 high school students, it assesses how mental imagery affects romantic feelings and their longevity. Results showed that those with stronger mental imagery abilities tended to have better recall and continuity of romantic feelings and more romantic relationships. Furthermore, a positive correlation was found between the ability of mental imagery and the number of romantic relationships. This implies a notable role of mental imagery in romantic desire.

Keywords: Romantic Desire, Mental Imagery, Romantic Relationships, Continuity of Romantic Feelings, Psychology, Adolescence

1. Introduction

Aphantasia, a condition describing an individual's inability to generate mental images, has emerged as a widely-discussed subject in recent times. The phenomenon was first observed in 1880 by psychologist Sir Francis Galton who discovered certain individuals possessing what he described as a "faculty at the lowest." These individuals commonly exhibited reduced vividness in their mental imagery, with it being "dim and not comparable in brightness to the real scene" [1]. However, he did not officially designate a name for the condition. It was not until recently that this intriguing topic was revisited and expanded upon by Professor Adam Zeman and his team who coined the term "Aphantasia" [6].

In researchers' life, one of the researchers suffers the Aphantasia and he is hardly to occur a romantic desire to the specific people. The researcher hypothesizes that the onset of romantic emotions necessitates the creation of mental imagery of the object of affection. This leads to the proposition that romantic desire may indeed correlate with the capacity for mental imagery. To minimize the influence of marital status on results and to increase the sample size of the experiment, a survey was conducted using the self-constructed questionnaire along with the Visual Imagery Questionnaire (VVIQ) [7] targeting adolescents aged between 14 to 22.

2. Research Design

2.1. Methodology

In order to ascertain the relationship between romantic desire and mental imagery, particularly the connection to Aphantasia, we employed the VVIQ along with specific inquiries related to romantic interest. Initial queries were focused on assessing the ease with which participants experienced romantic feelings, with responses ranging on a scale of 1 to 10:

> *In the past year, have you easily experienced romantic feelings (such as suddenly having a crush on someone or being sexually aroused)?*

Furthermore,

> *How long will your romantic feelings last for someone?*

> *What's your numbers of Romantic Relationships?*

The final two yes-or-no questions included:

> Do you keep thinking about someone for a week or two after meeting him or her?

> At some point, you see someone and really want to date them, but after four or five days or a shorter period, if you haven't seen them or a photo of them again, you forget about them. (You can't even remember what they look like in your head.)

2.2. Participants

We received 292 completed questionnaires from high school students who were unaware of the study's objectives. After accounting for false responses using planted misleading options, a total of 218 valid responses were left for analysis. The participating individuals (110 females, 108 males) ranged in age from 14 to 22(M=16). Participants had normal or corrected-to-normal eyesight, did not suffer from color blindness, and had no diagnosed neurological conditions. As an incentive for participation, students were offered the chance to earn extra credit points or small gifts. Before the study, participants were informed that the survey aimed to investigate potential causes of romantic emotions.

3. Results

3.1. Overview

According to 218 valid questionnaires, since most of participants' VVIQ score is higher than 23, only 2 of the participants suffer Aphantasia [2]. Though, we still find that there is a big difference of the VVIQ score. The lowest valid VVIQ score is 18 and the highest score is 80, M is 64 and the s.d. is about 12.4. The statistical graph is shown in the following Figure 1 and Table 1.

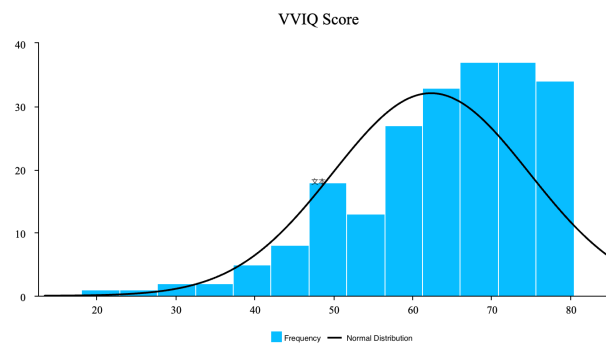


Figure 1: VVIQ Arrangement

Table 1: VVIQ Normal Distribution Calculation Table

Name	Sample Size	Average	s.d.	skewness	kurtosis	Kolmogorov-Smirnov	
						The statistic D value	p
VVIQ Score	218	62.257	12.437	-0.856	0.581	0.095	0.000**
* $p < 0.05$ ** $p < 0.01$							

Although it doesn't have normal traits, since the skewness is lower than 10 and the kurtosis is lower than 3, we can generally accept that the VVIQ Score follows a normal distribution in this sample [8].

3.2. The Correlation between Mental Imagery and Romantic Feeling Memory

Firstly, we use Logistic Regression Model to calculate the connections between VVIQ Score and the condition which is: "One moment you see someone you really want to be with, but after four or five days or less (note the time frame here), if you haven't seen him or a picture again, you forget about him." If the participants think it's true, then the value is 1, otherwise the value is 0. Results are shown in Table 2.

Table 2: VVIQ Score and First Question

	Estimated Value	Standard Error	Z-Statistic	p value
VVIQ Score	-0.034	0.012	-2.839	0.005
Intercept	1.141	0.748	1.526	0.127

It can be seen from the table above that a binary logistic regression analysis was conducted, with VVIQ Score as the independent variable and Romantic Feeling Memory as the dependent variable. The

table shows that VVIQ Score can explain 0.03 of the variation in Short Romantic Feeling Memory. The model formula is $\ln(p/1 - p) = 1.141 - 0.034 * VVIQ\ Score$ (where p represents the probability that Romantic Feeling Memory is 1, and $1 - p$ represents the probability that it is 0).

The specific analysis shows that, the regression coefficient value of VVIQ Score is -0.034, which exhibits significant negative correlation with Romantic Feeling Memory at the 0.01 level ($z=-2.839$, $p=0.005<0.01$). This means that VVIQ Score has a significant negative impact on Romantic Feeling Memory. The odds ratio (OR) value is 0.966, which means that when VVIQ Score increases by 1 unit, the magnitude of change (reduction) in Romantic Feeling Memory is 0.966 times [3][9].

In conclusion, VVIQ Score has a significant negative impact on Romantic Feeling Memory.

3.3. The Correlation between Ability of Mental Imagery and the Continuity of Romantic Feelings.

Then, we want to research the connections between the continuity of romantic feelings and the ability of mental imagery.

We set “Do you keep thinking about someone for a week or two after meeting him or her?” in our questionnaire set let the choice “YES” to 1 and “NO” to 0. Results are shown in Table 3.

Table 3: Binary Logistic Regression of VVIQ Score and Continuity

	Estimated Value	Standard Error	Z-Statistic	p value
VVIQ Score	0.035	0.012	2.936	0.003
Intercept	-2.364	0.767	-3.083	0.002

From the table, it can be seen that conducting a binary logistic regression analysis using VVIQ Score as the independent variable and continuity of romantic feelings as the dependent variable, VVIQ Score can explain the 0.03 variation in continuity of romantic feelings. From the table, the model formula is: $\ln(p/1 - p) = -2.364 + 0.035 * VVIQ\ Score$ (where p represents the probability of continuity of romantic feelings being 1, and 1-p represents the probability of continuity of romantic feelings being 0).

Further analysis reveals that the regression coefficient of VVIQ Score is 0.035 and shows significant positive impact on continuity of romantic feelings at the 0.01 level of significance ($z=2.936$, $p=0.003<0.01$). This means that VVIQ Score will have a significant positive influence on continuity of romantic feelings. The odds ratio (OR value) is 1.036, which implies that a unit increase in VVIQ Score will lead to 1.036 times increase in continuity of romantic feelings [3][9].

In summary, VVIQ Score has a significant positive influence on continuity of romantic feelings.

3.4. The Connections between the Ability of Mental Imagery and Love Desire

To further illuminate the relationship between the ability of mental imagery and romantic feelings, we calculated the Pearson correlation coefficient between the VVIQ score and numbers of romantic relationships. The results are in the Table 4.

Table 4: Correlation of VVIQ Score and Numbers of Romantic Relationships

Pearson Correlation		
		Numbers of Romantic Relationships
VVIQ Score	Coefficient of Correlation	0.143*
	p - value	0.034

* $p<0.05$ ** $p<0.01$

The correlation coefficient between Numbers of Romantic Relationships and VVIQ Score is 0.143 with a significance level of 0.05, indicating a significant positive correlation between Numbers of Romantic Relationships and VVIQ Score.

3.5. The Connections between the Ability of Mental Imagery and other Irrelevant Factor

Table 5: Correlation of VVIQ Score and Duration of Romantic Desires

Pearson Correlation		
		Duration of Romantic Desires
VVIQ Score	Coefficient of Correlation	0.108
	p - value	0.111

* $p<0.05$ ** $p<0.01$

We also analyze other two questions. The results are presented in Table 5 and Table 6.

Through the Pearson Correlation, we discovered that there is no relationship between the ability of mental imagery and the frequency of romantic desire occurrence or the duration of romantic desire.

Table 6: Correlation of VVIQ Score and Frequency of Romantic Desires Occurrence

Pearson Correlation		
	Coefficient of Correlation	Frequency of Romantic Desires Occurrence
VVIQ Score		0.076
	<i>p</i> - value	0.265
* <i>p</i> <0.05 ** <i>p</i> <0.01		

4. Discussions

Our research findings, derived from the comprehensive analysis of questionnaire responses, unveil a compelling association between mental imagery capabilities and the intensity as well as continuity of romantic emotions. It was confirmed that individuals demonstrating superior mental imagery abilities possess more potent memories of romantic sentiments, alongside prolonged romantic feelings. These same individuals, our findings suggest, are prone to experience heightened romantic desire.

Further insights were gleaned from the participant pool, revealing that those with higher VVIQ scores, indicating superior mental imagery abilities, exhibit a higher likelihood of either being in love or having had such experiences. This observation aligns with the theories proposed by Robert Jeffrey Sternberg, who postulates that an integral component of love, namely romantic desire, is fundamentally anchored in passion [4][5]. Accordingly, individuals with pronounced mental imagery capabilities are predisposed to experience elevated romantic desires, which, in turn, increases their propensity to engage in romantic relationships.

Despite these findings, it is crucial to note the limitations within this study. This research delineates certain aspects of romantic desire without fully encapsulating its intricate nature. While the present investigation substantiates a correlation between the duration of romantic feelings and mental imagery abilities, the longevity of romantic emotions may also be subject to influence from various other factors. The current study underlines the impact of physiological elements on psychological constructs, such as romantic desire. However, it is imperative to stress that superior mental imagery capabilities should not be construed as a definitive or singular determinant of romantic desire.

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