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Is Time Accelerating? Interdisciplinary Insights from Perception, Stress, Energy, and Physics

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ABSTRACT

In contemporary society, many individuals experience a subjective sensation that "time is accelerating." Based on 164 valid questionnaires covering individuals aged 15–55, this study examines key factors influencing personal time perception from an interdisciplinary perspective encompassing psychology, philosophy, physics, and energy metabolism. Findings indicate that, first, media usage duration shows a significant positive correlation with perceived time acceleration. Immersive short-video and social media environments reshape individuals' temporal perception structures. Second, psychological stress exhibits a significant positive correlation with time anxiety; individuals under high stress are more likely to feel "there aren't enough hours in the day." Finally, high-focus activities such as mindfulness, meditation, artistic creation, and exercise mitigate perceived time acceleration to some extent, offering practical intervention pathways. This study reveals shared temporal distress among adolescents and adults, underscoring the importance of actively regulating life rhythms. Despite limitations in sample size and cross-sectional design, its findings offer insights for education, mental health, and daily living, while laying groundwork for future cross-cultural research integrating physiological data.

Keywords: Energy, Interdisciplinary. Perception, Physics, Psychological Stress, Time

1. INTRODUCTION

In modern society, we increasingly encounter a common refrain in everyday conversation: time seems to be passing ever more rapidly! Many share this perception: childhood felt interminably long, yet as adolescence and adulthood arrived, time began to accelerate. Similarly, social media platforms host extensive discussions on the theme of 'time speeding up.'

Physics defines time as a continuous, uniform and measurable dimension, which is one of the basic references for the operation of the universe. Einstein, a scientist, said in his theory of relativity that time is relative under the conditions of gravity and speed, but in human daily life, the flow rate of time is almost constant.

The research objectives of this paper are to employ an interdisciplinary approach to uncover the underlying mechanisms of the subjective experience known as the 'acceleration of time,' and to explore practical interventions that may mitigate this phenomenon. Consequently, the objectives encompass four distinct dimensions across different disciplinary levels:

Firstly, based on psychology, philosophy, physics and energy metabolism, this paper analyzes the various factors that cause the feeling of "time acceleration". From the psychological level, we can explore the influence of people's concentration distribution, cognitive load and emotional state changes on time perception and experience. The exploration from the philosophical perspective can help us to better reflect on the theoretical and ideological problems of time existence.

Secondly, explore the characteristics of people's perception of time in today's high information

density social background and psychological pressure environment. For this reason, this paper conducted a questionnaire survey on people aged 15-55. These groups' perception of time can provide clues for the formation of "fast-paced anxiety" and provide better support for mental health intervention.

Third, explore the effectiveness of highly focused activities such as meditation and artistic creation and energy management methods in restoring the "slow time" experience. These practices can not only improve concentration, but also restore individual balance from the way of psychological energy construction. Studying the influence of these activities on time perception can help relevant people to provide more practical psychological intervention methods.

Finally, this paper demonstrates the validity of the hypothesis through questionnaire survey and independent analysis, and based on this, puts forward feasible suggestions to improve time anxiety and individual energy imbalance. Based on the above four goals, this paper not only focuses on promoting the interdisciplinary research of time perception from a theoretical perspective, but also hopes to provide individuals and groups with inspiration and intervention tools from the practical application level, thus realizing the dual values of scientific research and social care.

2. LITERATURE REVIEW

2.1 Psychological Perspectives

Psychology has developed considerable maturity in research concerning the perception of time. Among these, the most classic theoretical framework of time perception was proposed by Zimbardo (1999), categorising individuals' temporal outlooks into future-oriented, past-indulgent, present-indulgent, present-fatalistic, and past-negative types. Zimbardo's theory emphasises that individuals' decision-making and experience processing are modulated by their intrinsic temporal orientation. For instance, future-oriented individuals typically excel at delaying gratification and prioritise long-term objectives, whereas present-hedonistic individuals tend to immerse themselves in immediate pleasures. These divergent temporal perspectives exert direct influences on learning styles, consumption habits, and psychological wellbeing.

In addition, the distribution of concentration and multi-task parallelism are also hot research directions in psychology. Studies have shown that when individuals process information in a multi-task environment, their subjective time will be lengthened or compressed (Buonomano, 2017). Especially in the state of highly distracted attention, the perception of time is more fragmented, and individuals may even have the feeling of "time disappearing". On the other hand, if you focus on a single goal, the individual's time experience may be extended and even enter a state of flow. This mechanism well explains the reason why people's perception of time has become faster in the digital society environment: there are too many fragmented information, and attention is highly dispersed, so that it is impossible to form a continuous time clue in the brain, and naturally time will fly.

According to developmental psychology, age affects individuals' perception of time. When children's cognitive development is immature, it is impossible to accurately perceive the length of time; Teenagers are very sensitive to short-term stimuli because of the rapid development of nervous system, and it is easy to have a "fast" experience; Middle-aged and elderly people will subjectively feel that time is speeding up because they pay more attention to the passage of time (Block et al., 1999). In recent years, more and more studies have emphasized the influence of digital media on teenagers' time perception. Teenagers who have been immersed in short video content for a long time are estimated to spend significantly less time in the experiment, and the fragmentation of attention will also aggravate the time experience (Haliti-Sylaj, T., 2024).

2.2 Philosophical Perspective

Philosophy primarily offers existential reflection on individual perceptions of time and space. The theory of "intra-temporal consciousness" posits that all human conscious experiences are inherently temporal (Husserl, 1928). Whether observing a moving or stationary object, we experience time through a triadic structure of "retention, present, and anticipation". Time is not an externally quantifiable clock, but rather a dimension unfolding within consciousness itself. Husserl's theory informs us that the perception of accelerated time does not stem from an actual change in the external flow of time, but rather from the disruption and fragmentation of our internal temporal consciousness.

Heidegger (1927) demonstrated the relationship between time and existence in Being and Time. He believes that human existence is a kind of "being to death", and people feel that the urgency of time stems from the finiteness of existence. The accelerated experience of modern society also reflects the anxiety of individuals in the pursuit of meaning in a limited life. It can be seen that time is not only a measuring tool, but also a fundamental structure to reveal the way of existence. In eastern philosophy, Buddhism's theory of moments is the most typical. Buddhism believes that all phenomena are born and die in an instant, and time is not a continuous entity, but consists of countless moments (Kalupahana, 1992). The theory of moments emphasizes the impermanence

of time, and always reminds human beings that "long-term" and "constant" experiences are illusions. With regard to the discussion of the sense of time acceleration, the theory of moments reveals that subjective anxiety comes from the persistence of eternity and persistence. Through practice, individuals can return to the present and experience "slow time". In recent years, more and more scholars have begun to pay attention to the changes of digital life on time experience. Lee (2022) proposed that digital accelerated culture is changing the individual's "inner time". He believes that the way of individual existence has been reshaped, which has spawned a new "digital anxiety". This study adds contemporary context to traditional philosophical thinking.

2.3 Physics and Quantum Speculation

The study of physics provides a solid scientific foundation for the ontology of time. Einstein's theory of relativity points out that time and space constitute a whole of time and space, and the flow rate of time will change with speed and gravity (Einstein, 1916). The internal time of a high-speed object will be relatively slow, but this effect is almost imperceptible in human daily life, so it cannot be used to explain the current phenomenon of "time acceleration". In the field of quantum physics, some scholars have pointed out that there is a correlation between consciousness and quantum process, and time may also have a multidimensional structure. However, these conjectures remain highly speculative and have not been empirically verified (Rovelli, 2018).

In contemporary discussions, there is a "spiritual upsurge", often uses quantum language metaphorically to explain consciousness or to claim that "thoughts can alter time." It is worth noting that the above explanation has not gained support from mainstream physicists and should be regarded as speculative or metaphorical in nature, not as an experimental finding. Such interpretations, lacking mainstream physics endorsement, should be viewed as speculative or metaphorical rather than experimental discoveries.

Many scholars have criticized the concept of "quantum consciousness," pointing out its lack of testable hypotheses and empirical foundation (Tegmark, 2000; Reimers et al., 2014). Therefore, the quantum consciousness-related concepts addressed in this study are limited to exploring the effects of time perception within established scientific frameworks such as Einstein's relativity and circadian rhythm biology. Quantum interpretations remain philosophical extensions or speculative analogies. Nevertheless, interdisciplinary research offers valuable perspectives—the intersection of neuroscience and quantum information theory may stimulate conceptual exploration, but should not be conflated with validated physiological mechanisms.

2.4 Research on Time Perception of Energy

In recent years, more and more studies have introduced the energy perspective into the discussion of time perception. Dijk & Archer (2009) found that the level of physiological energy affects cognitive efficiency, and the generation of ATP and the fluctuation of circadian rhythm determine the activity of the brain. The more energetic, the higher the efficiency of individual information processing, and the smoother the time experience; When the energy is low, the more concentrated the individual's stress and anxiety are, the more time flies. Psychological energy dimension is also very important. Emotional state affects subjective time. For example, positive emotions will make time longer and richer. Negative emotions or stress anxiety will compress time and produce anxiety of insufficient time (Fredrickson, 2001). In modern society, high-intensity information flow and continuous performance pressure will overdraw personal psychological energy, and more and more people feel that "time is accelerating". Research shows that meditation, mindfulness and other focused training can effectively restore psychological energy, and then extend subjective time experience. Chen et al. (2022) concluded through experiments that after 56 days of mindfulness training, participants' subjective sense of time became more balanced. Activities that require deep concentration, such as artistic creation and meditation, can also help individuals alleviate feelings of time anxiety and restore energy and mental clarity. (Mishra et al. (2024)

The concept of "energy" in this study refers solely to an individual's "subjective psychological energy," encompassing perceived vitality, alertness, and the availability of mental resources—not objective physiological output. Operationally, self-report scales can be used to record and assess perceptions of vitality, sustained focus, and emotional stability, such as "I maintain sufficient energy and concentration throughout the day." The above concept is adapted from empirically validated scales of subjective energy and vitality (Ryan & Frederick, 1997; Shirom, 2011), maintaining consistency with psychological concepts.

It is particularly important to note that this concept of "energy" differs from behavioral frequency and perceived efficacy, such as the frequency of meditation/artistic creation/exercise mentioned in Q14, and the efficacy referenced in Q15. Behavioral frequency reflects activity patterns, while subjective energy captures an internal psychological state that either regulates or mediates the relationship between such time-based activities and time

perception. It is reiterated that this study focuses solely on self-perceived energy independent of physiological indicators like cortisol or heart rate. Any related inferences remain theoretical and do not constitute empirical claims.

The research of psychology and physiology shows that energy is the intermediary of time perception and the adjustment tool of time. High-concentration activities such as meditation, creation and exercise can restore psychological energy and enable individuals to enter the "slow time" state faster (Davidson & Kaszniak, 2015). It can be seen that the inclusion of energy mechanism not only expands the theoretical framework of time perception, but also provides a new direction for practical psychological intervention.

3. METHODOLOGY

3.1 Research Objectives and Hypotheses

This paper examines the characteristics of time perception among individuals across different age groups (15–55 years) within modern high-information-density and high-stress environments. It analyses the impact of psychological stress, media usage habits, and energy regulation strategies on the phenomena of 'accelerated time perception' and 'time anxiety'. Distinct from prior research focusing solely on adolescents, this study encompasses a broader age range to compare similarities and differences in time perception across life stages. Based on literature review and empirical observations, three hypotheses are proposed:

H1: Individuals who frequently use short videos or social media (regardless of age) are more likely to perceive 'time passing quickly'.

H2: Individuals with higher psychological stress levels are more likely to report anxiety about 'time running out'.

H3: Individuals with habits of meditation, artistic creation, or exercise are less likely to experience the sensation of accelerated time or time anxiety.

This study employed convenience sampling, targeting school students and their parents, corporate employees, and others, with online communities serving as distribution and collection channels. This approach enabled me to rapidly gather sample data from diverse regions and demographic profiles within a short timeframe. Nevertheless, the geographical and demographic characteristics of my sample remain relatively concentrated, potentially limiting the representativeness of the findings across broader populations.

Therefore, rigorous consideration of the findings' generalizability is essential for interpretation and practical application. Should this topic be revisited in future research, adopting a more randomized and cross-regional sampling approach would be necessary to enhance external validity.

3.2 Research Methodology

Sample: This study employed a questionnaire survey method, distributing research questionnaires to households, schools, and online communities. Participants ranged in age from 15 to 55 years, encompassing secondary school pupils and working adults. All questionnaires were completed anonymously.

Tools: Unless otherwise specified, all questionnaire items employed a 5-point Likert scale (1 = Strongly disagree/Never, 5 = Strongly agree/Always). The questionnaire is presented in Appendix 1.

Analysis Plan: Regarding primary variables and constructs, this study employs media duration, distraction levels, stress index, energy/art/mindfulness frequency, subjective energy, and age group as independent variables; the Time Acceleration Index (PTAI) serves as the dependent variable.

The scoring rules for independent/dependent variables are as follows:

The Time Perception Acceleration Index (PTAI) is the average of items 10, 11, 12 and item 13 (reversed: 6−raw score), ranging from 1 to 5;

The Stress Index is the average of items 7 and 8;

The Time Anxiety Index is the score for item 9; Attention Distraction Index is the average of items 5 and 6; Media Duration is item 4, coded1-5: <1h=1, 1–2h=2, 3–4h=3, 5–6h=4, ≥7h=5; Subjective Energy = average of items 16 and 17 (reverse-scored: 5−raw score); Energy/Art/Mindfulness Frequency (Question 14) coded 0–3: Never = 0, Occasionally = 1, 1–2 times weekly = 2, ≥3 times weekly = 3; Question 15 serves as a reference for subjective sense of efficacy. Age groups: 15–24 = 1, 25–40 = 2, 41–55 = 3 (three groups total), may be used as a grouping variable if required.

This study employs descriptive statistics and group comparisons to contrast the mean values, standard deviations, and frequency percentages of various indicators within the report. Mean values for PTAI and time anxiety are presented by age group. Comparisons of PTAI and time anxiety across the three age cohorts were analysed using t-tests/one-way ANOVA or non-parametric tests. Correlation tests examined associations between media duration, stress indices, and distractibility with PTAI/time anxiety, thereby validating the proposed hypotheses.

3.3 Ethics statement

This study strictly adheres to ethical standards for social science research. All participants were explicitly

informed of the research objectives beforehand and were granted the right to withdraw at any time. All participants remained anonymous and confidential.

The online questionnaire for this study was distributed on August 24, 2025, via online channels to recruit participants including international and domestic high school students, parents, and corporate employees residing in Hangzhou, Jiangsu, Shanghai, and other regions within China.

This study did not collect or identify any personally identifiable information.

3.4 Caregiver Consent Statement

Some participants in this study were under the age of 18. Prior to their participation in completing the questionnaire, written or verbal consent was obtained from their parents or legal guardians.

4. RESULTS AND DISCUSSION

Combining descriptive statistics, variance analysis, correlation analysis and hypothesis testing, this part discusses the relationship between media use, psychological stress, distraction, mindfulness/art/exercise habits and time acceleration and time anxiety.

4.1 Description of sample characteristics

In this study, a total of 164 valid questionnaires (n=164) were collected, and the age distribution was 15-55 years old, which were divided into three groups, as follows:

Juvenile group (15-24 years old), with 28samples (n = 28), accounting for 17.1%;

Youth group (25-40 years old) with 62 samples (n = 62), accounting for 37.8%;

Middle-aged group (41-55 years old), with74 samples (n = 74), accounting for 45.1%;

After testing each scale dimension using Cronbach's α coefficient, the results indicate overall good reliability. As shown in Table 1, the Cronbach's α for the Attention Distraction dimension was 0.688, with all items exhibiting a corrected item total correlation (CITC) of 0.527, indicating high internal consistency. The α coefficient for the Stress Index dimension was 0.605, with a CITC value of 0.434, suggesting acceptable inter-item correlations. The α coefficient for the subjective energy dimension was 0.579, with a CITC value of 0.408, indicating slightly lower reliability but still within an acceptable range. The overall α coefficient for the Perceived Time Acceleration Index (PTAI) was the highest (0.695), with CITC values for individual items ranging from 0.242 to 0.631, indicating good internal consistency for this dimension. Overall, Cronbach's α for all subscales met the commonly accepted reliability standard in psychological research (>0.6). The scale demonstrates good internal consistency and measurement stability, making it suitable for subsequent statistical analysis.

Through visual scatter diagram analysis, the distribution of samples in the perception of media usage duration and time acceleration is shown in Figure 1.

It can be seen that the time acceleration index (1–5) of the sample media increases significantly with the

Table 1: Cronbach's Alpha Analysis

Dimension	Item	CITC	Deleted α coefficient	Cronbach α
Distracted	When studying or working, I often multitask simultaneously (e.g., chatting while solving problems or handling office tasks).	0.527	-	0.688
	I'm often interrupted by phone notifications while working on tasks.	0.527	-	
Pressure index	Over the past two weeks, I have often felt overwhelmed by academic or work pressure.	0.434	-	0.605
	I often feel anxious about progress/deadlines.	0.434	-	
Subjective energy	I usually feel energetic and find it easy to concentrate during the day.	0.408	-	0.579
	(Reverse) I often feel tired during the day and have difficulty sustaining my attention.	0.408	-	
PTAI	I often feel that "time flies by."	0.515	0.615	0.695
	In recent months, I've felt time accelerating more frequently.	0.631	0.524	
	I find daily events feel more fragmented, as if time itself is compressed.	0.582	0.564	
	(Reverse) I rarely experience the sensation that "time is accelerating."	0.242	0.779	

Source: Author, 2025

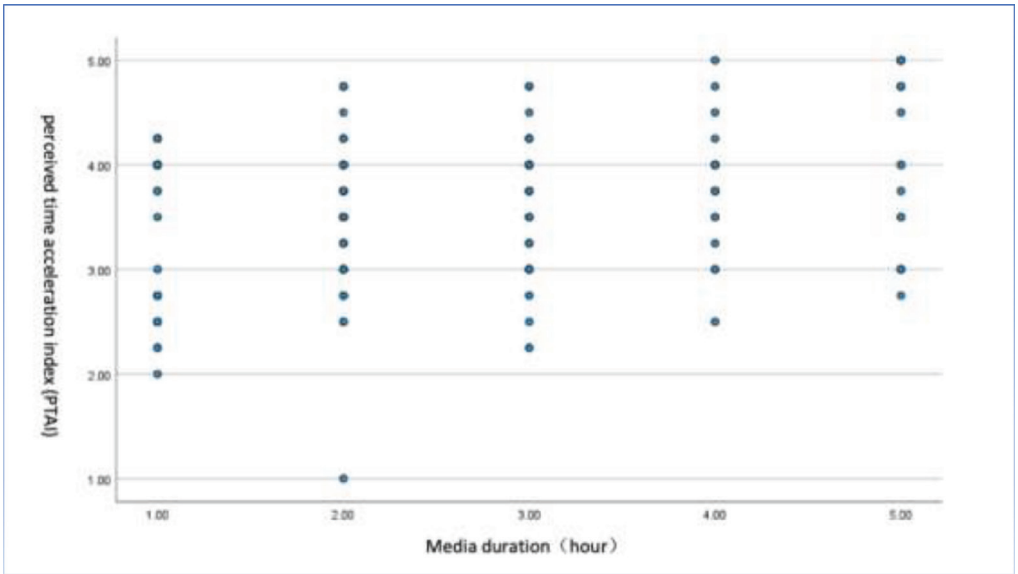

Fig. 1: Scatter plot of sample media exposure duration versus perceived time acceleration index (PTAI)

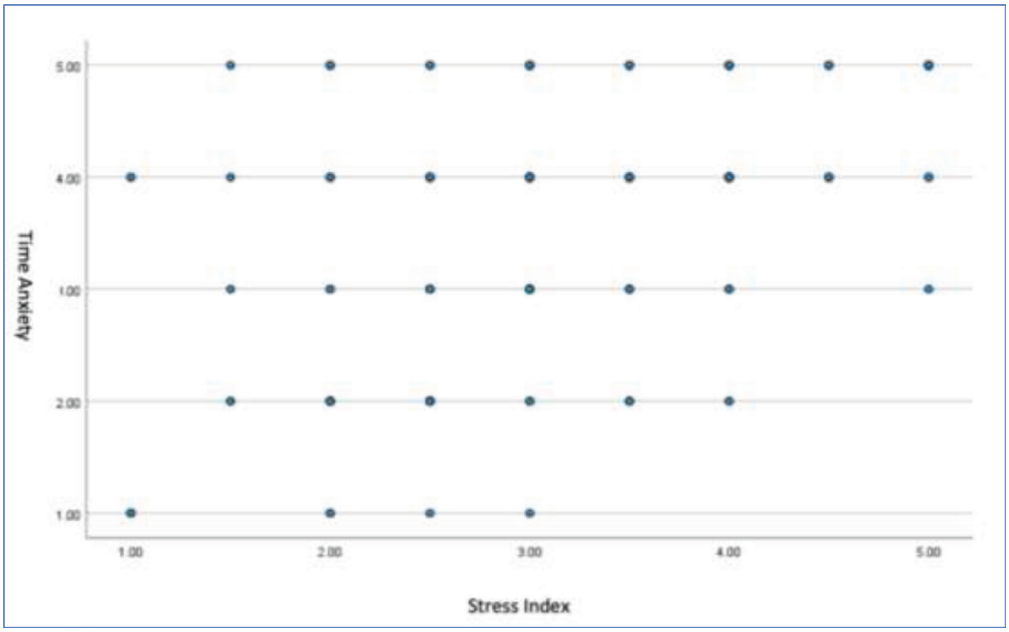

Fig. 2: Scatter Plot of Time Anxiety and Stress Index

increase of its contact with the market (0-4/ hour). This shows that there is a positive correlation between media contact duration and time acceleration index. Through the visual scatter chart 2, the distribution of time anxiety value (1-5) and stress index (1-5) can also be seen. When the stress index is greater than 4, the participants' anxiety about time also increases obviously. It can be seen that psychological stress also has a certain correlation and influence on the individual's perception of time.

4.2 Descriptive statistics

In order to further show the descriptive analysis results of each variable, this paper makes a descriptive analysis of the independent variables and dependent variables that affect individual perception time acceleration, as shown in Table 2.

Descriptive statistical analysis was conducted on the primary variables. Results indicate:

The mean subjective energy score was 3.20 (SD = 0.86), reflecting a moderate level;

The mean energy/art/mindfulness frequency score was 1.48 (SD = 0.99), indicating a low frequency of related behaviors;

The mean time anxiety score was 3.59 (SD = 1.14), with a median of 4.00, suggesting respondents generally experienced a certain degree of time pressure;

The mean stress index score was 3.18 (SD = 0.98), comparable to time anxiety;

Table 2 Descriptive analysis

Name	Sample	Min	Max	Mean	SD	Median
Subjective energy	164	1.000	5.000	3.201	0.861	3.000
Energy/Art/Mindfulness Frequency	164	0.000	3.000	1.476	0.994	1.000
Time anxiety	164	1.000	5.000	3.585	1.140	4.000
Pressure index	164	1.000	5.000	3.180	0.977	3.000
Distraction	164	0.000	5.000	2.991	1.100	3.000
Media duration	164	1.000	5.000	2.720	1.241	3.000
Media Use and Attention	164	1.000	5.000	2.890	0.876	3.000
Psychological Stress and Time Anxiety	164	1.000	5.000	3.315	0.889	3.333
Time acceleration index	164	1.000	5.000	3.649	0.737	3.750

Source: Author, 2025

The average score for attention distraction was 2.99 (SD = 1.10), indicating mild to moderate distraction during tasks for most individuals;

The mean media duration score was 2.72 (SD = 1.24), indicating moderate frequency of media use among participants;

The mean score for media use and attention was 2.89 (SD = 0.88), comparable to the level of attention distraction.

The combined average score for psychological stress and time anxiety dimensions was 3.32 (SD = 0.89), while the time acceleration index showed a higher mean (3.65, SD = 0.74), suggesting most respondents subjectively experienced a pronounced sensation of "time speeding up."

Overall, the distribution of variables was reasonable, indicating that the sample group exhibited moderately high levels across energy states, attention, stress, and time perception.

4.3 Differential Analysis

1. Age Differences

Table 3 shows the results of variance analysis of time acceleration index in different age groups. Age groups (15-24 years old, 25-40 years old, 41-55 years old) have no significant influence on the time acceleration index (F = 0.270, p = 0.764), indicating that the differences in time acceleration perception among different age groups are not statistically significant. The average value of time acceleration index of each age group is close (15-24 years old: M = 3.571, 25-40 years old: M = 3.694, 41-55 years old: M = 3.642), and the standard deviation also shows that the distribution of participants in each group is relatively consistent. It shows that age has no significant effect on time acceleration perception.

2. Differences in Mindfulness/Art/Exercise Frequency

Table 4 shows the results of variance analysis of energy/art/mindfulness frequency versus time acceleration index. The analysis shows that the influence of energy/art/mindfulness activities with different frequencies on the time acceleration index is significantly different (F = 8.585, p < 0.001). Specifically, individuals who frequently engage in these activities (1-2 times per week and ≥3 times per week) have lower scores on the time acceleration index (1-2 times per week: M = 3.391, and ≥3 times per week: M = 3.341), while individuals who occasionally engage in (≤1 time per week) and those who do not engage in such activities (never: m = 4 This shows that positive mindfulness/art/exercise habits may help alleviate the subjective perception of "time goes by too fast".

4.4 Correlation Analysis

Pearson correlation coefficients were used to analyze relationships among key variables. Results indicate that the time acceleration index significantly correlates with most psychological variables. Specifically, the time acceleration index correlates with time anxiety (r = 0.618, p < .001), stress index (r = 0.377, p < .001), attention distraction (r = 0.268, p < .001), media duration (r = 0.346, p < .001), and the composite indicator of

Table 3: Analysis of Variance Results by Age Group

	Age (mean ± SD)			*F*	*p*
	15–24 (*n*=28)	25–40 (*n*=62)	41–55 (*n*=74)		
Time acceleration index	3.571±0.707	3.694±0.885	3.642±0.607	0.270	0.764

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Source: Author, 2025

Table 4: Results of Analysis of Variance

	Energy/Art/Mindfulness Frequency (Mean ± SD)				*F*	*p*
	Never (*n*=27)	**Occasionally (≤1 time/ week) (*n*=65)**	**1–2 times/week (*n*=39)**	**≥3 times/week (*n*=33)**		
Time acceleration index	4.102±0.833	3.773±0.596	3.391±0.522	3.341±0.886	8.585	<0.001***

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Source: *Author, 2025*

Table 5: Pearson Correlation Analysis

	Mean	**SD**	1	2	3	4	5	6	7	8	9
Time Acceleration	3.649	0.737	1								
Subjective Energy	3.201	0.861	-0.148	1							
Energy/Art/ Mindfulness Frequency	1.476	0.994	-0.358***	0.253**	1						
Time Anxiety	3.585	1.140	0.618***	-0.171*	-0.112	1					
Pressure index	3.180	0.977	0.377***	-0.271***	-0.120	0.450***	1				
Distraction	2.991	1.100	0.268***	-0.194*	-0.125	0.251**	0.437***	1			
Media Duration	2.720	1.241	0.346***	-0.234**	-0.185*	0.212**	0.272***	0.256***	1		
Media Use and Attention	2.890	0.876	0.238**	-0.263***	-0.083	0.222**	0.419***	0.905***	0.515***	1	
Psychological Stress and Time Anxiety	3.315	0.889	0.540***	-0.272***	-0.136	0.757***	0.924***	0.427***	0.290***	0.402***	1

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Source: Author, 2025

psychological stress and time anxiety ($r = 0.540$, $p < .001$). This indicates that individuals experiencing accelerated time perception often exhibit higher levels of anxiety, stress, and attention distraction. Conversely, the time acceleration index showed significant negative correlations with subjective energy ($r = −0.148$, $p < .05$) and energy/art/mindfulness frequency ($r = −0.358$, $p < .001$), indicating that individuals with higher energy levels and more frequent mindfulness activities experienced weaker subjective time acceleration.

Furthermore, subjective energy negatively correlated with stress ($r = −0.271$, $p < .001$), distraction ($r = −0.194$, $p < .05$), and media duration ($r = −0.234$, $p < .01$), suggesting that higher energy levels are associated with lower stress and distraction. Distractibility and media use showed extremely strong correlations with attentional focus ($r = 0.905$, $p < .001$), indicating high consistency in the psychological processes they reflect. Both variables also significantly positively correlated with time anxiety, stress index, and total psychological stress (all $p < .001$), demonstrating that attentional issues are closely linked to temporal pressures. Finally, the composite variable of psychological stress and time anxiety showed the strongest positive correlations with time anxiety ($r = 0.757$, $p < .001$) and stress index ($r = 0.924$, $p < .001$), validating its effectiveness in reflecting overall psychological stress levels.

Overall, the results indicate a strong positive association between time experience, anxiety, stress, attentional distraction, and media use, while energy levels and mindfulness activity frequency exert a protective effect to some extent.

4.5 Hypothesis Test Results

Hypothesis1: Individuals who frequently use short videos or social media (regardless of age) are more likely to perceive that “time flies.”

As shown in Table 6, this study conducted a linear regression analysis for Hypothesis 1, which posits that “individuals who frequently use short videos or social media (regardless of age) are more likely to perceive ‘time passing quickly.’” The regression analysis revealed a significant positive effect of media duration on the time acceleration index ($\beta = 0.346$, $p < 0.001$). The unstandardized coefficient of 0.206 indicates that the perception of time acceleration increases significantly as media usage time increases. The model’s R^2 was 0.120, with an adjusted R^2 of 0.115, indicating that media duration explains approximately 11.5% of the variance in perceived time acceleration. The F-value was 22.084 with a p-value less than 0.001, confirming the model’s statistical significance. Thus, Hypothesis 1 is supported, demonstrating that media duration

significantly influences individuals' perception of time acceleration.

Hypothesis 2: Individuals with higher levels of psychological stress are more likely to report feelings of anxiety about "not having enough time."

Table 7shows the results of linear regression analysis for hypothesis 2. Results indicated overall good model fit with statistical significance: $F(1, 162) = 26.852$, $p < .001$. The coefficient of determination was $R^2 = 0.142$ (adjusted $R^2 = 0.137$), suggesting psychological stress explains approximately 14% of the variance in time anxiety. The regression coefficient for the stress index on the time acceleration index was B = 0.284 (SE = 0.055, β = 0.377, t = 5.182, $p < .001$). This indicates that higher psychological stress levels correlate with individuals' greater tendency to perceive time as passing too quickly or to experience the subjective sensation of "not having enough time." This result supports hypothesis 2, indicating that higher psychological stress level is related to stronger perception of time anxiety.

Hypothesis 3: Individuals who engage in meditation, artistic creation, or exercise regularly score lower on measures of "time acceleration" and "time anxiety."

Table 8 presents the linear regression analysis for Hypothesis 3, examining the effect of meditation, artistic creation, or exercise habits (energy/art/mindfulness frequency) on the time acceleration index. The regression results indicate that energy/art/mindfulness frequency significantly negatively influences the time acceleration index (β = -0.358, $p < 0.001$). Specifically, the unstandardized coefficient of -0.265 indicates that as energy/art/mindfulness frequency increases, the perception of time acceleration significantly decreases. The model's R^2 is 0.128, with an adjusted R^2 of 0.122, suggesting that energy/art/mindfulness frequency explains approximately 12.2% of the variance in the time acceleration index. The F-value was 23.739 with a p-value less than 0.001, indicating the model's statistical significance. In summary, energy/art/mindfulness frequency significantly reduced individuals' perception of time acceleration, partially supporting Hypothesis Three.

To examine the predictive role of individuals' energy/art/mindfulness frequencies on time anxiety, a linear regression analysis was conducted with time anxiety as the dependent variable. As shown in Table 9, the overall model was not significant ($F(1, 162) = 2.054$, $p = 0.154$) and exhibited low explanatory power ($R^2 = 0.013$, adjusted $R^2 = 0.006$), indicating limited predictive capacity for time anxiety. The regression coefficient for the independent variable Energy/Art/Mindfulness Frequency was B =

Table 6: Results of Linear Regression Analysis (n=164)

	Non-SD Coefficient		SD Coefficient	*t*	*p*	Collinearity Diagnosis	
	B	**Sd error**	***Beta***			**VIF**	**Tolerance**
Constant	3.090	0.131	-	23.643	<0.001***	-	-
Media Duration	0.206	0.044	0.346	4.699	<0.001***	1.000	1.000
R 2	0.120						
Adjust R 2	0.115						
F	F (1,162)=22.084,p=0.000						
D-W	0.949						

Note: Dependent variable = Time acceleration index

** p<0.05 ** p<0.01 *** p<0.001*

Source*:* Author, 2025

Table 7: Linear Regression Analysis Results (n=164)

	Non-SD Coefficient		SD Coefficient	*t*	*p*	Collinearity Diagnosis	
	B	**Sd error**	***Beta***			**VIF**	**Tolerance**
Constant	2.745	0.183	-	15.035	<0.001***	-	-
Stress Index	0.284	0.055	0.377	5.182	<0.001***	1.000	1.000
R 2	0.142						
Adjust R 2	0.137						
F	*F* (1,162)=26.852,*p*=0.000						
D-W	0.291						

Note: Dependent variable = Time anxiety

** p<0.05 ** p<0.01 *** p<0.001*

Source*:* Author, 2025

Table 8: Linear Regression Analysis Results (n=164)

	Non-SD Coefficient		SD Coefficient	*t*	*p*	Collinearity Diagnosis	
	B	Sd error	*Beta*			VIF	Tolerance
Constant	4.041	0.097	-	41.787	<0.001***	-	-
Energy/Art/ Mindfulness Frequency	-0.265	0.054	-0.358	-4.872	<0.001***	1.000	1.000
R 2	0.128						
Adjust R 2	0.122						
F	*F* (1,162) =23.739,*p*=0.000						
D-W	0.268						

** p<0.05 ** p<0.01 *** p<0.001*

Note: Dependent variable = Time acceleration index

Source: Author, 2025

Table 9: Linear Regression Analysis Results (n=164)

	Non-SD Coefficient		SD Coefficient	*t*	*p*	Collinearity Diagnosis	
	B	Sd error	*Beta*			*B*	
Constant	3.775	0.159	-	23.712	<0.001***	-	-
Energy/Art/Mindfulness Frequency	-0.128	0.090	-0.112	-1.433	0.154	1.000	1.000
R 2	0.013						
Adjust R 2	0.006						
F	*F* (1,162)=2.054,*p*=0.154						
D-W	1.309						

Note: Dependent variable = Time anxiety

** p<0.05 ** p<0.01 *** p<0.001*

Source: Author, 2025

−0.128 (SE = 0.090, β = −0.112, t = −1.433, p = 0.154), failing to reach statistical significance. This indicates that the frequency of participation in mindfulness and artistic activities does not significantly predict time anxiety.

4.6 Discussion

Based on data from 164 questionnaire respondents, this study explores differences in time perception and influencing factors across age groups (15–55 years) in modern society, substantiating the following hypotheses:

First, longer individual media usage significantly enhances the perception of accelerated time, indicating that an "immersive media environment" impacts individuals' temporal perception structures.

Second, psychological stress and time anxiety are positively correlated, revealing that psychological pressures arising from fast-paced social environments can alter individuals' temporal perception structures.

Finally, mindfulness, meditation, and high-concentration activities like artistic creation or exercise demonstrate positive effects in mitigating accelerated time perception, offering viable intervention pathways. However, when we try to analyze the influence of the frequency of energy/art/mindfulness activities on time anxiety, the results in Table 9 tell us that these activities can alleviate people's sense of acceleration of time, but the influence on time anxiety is not obvious.

Beyond validating these hypotheses, the findings suggest new approaches: both adolescents and adults grapple with accelerated time perception. Actively adjusting the pace of life-through exercise, meditation or focused creative pursuit-may become a new strategy to alleviate time anxiety, although its direct impact on time anxiety needs further study.

5. CONCLUSION

Based on the interdisciplinary perspectives of psychology, philosophy and physical energy metabolism, this paper studies the sense of "time acceleration" generally perceived by individuals in today's society. Based on the previous literature review and questionnaire survey, it is found that the individual's perception of time is closely related to the external environment, the individual's internal psychological state, energy level and existence consciousness. Psychology shows that the type of time view, individual stress level and distraction degree are the core factors that cause individual subjective time acceleration. From the philosophical perspective, the

way of individual existence and inner consciousness have a deep regulating effect on the perception of time. The study of energy and circadian rhythm shows that the lack of psychological energy and physiological energy will directly compress the individual's perception of time and make people feel anxious about "not enough time". From a practical point of view, this paper provides a reference for the intervention of education, mental health and lifestyle. Teenagers and youth groups need to strengthen their concentration management and the frequency of using digital media, limit the fragmented input of information, and cultivate their deep concentration to alleviate their time anxiety and sense of time acceleration. Middle-aged people, on the other hand, need to pay attention to their own energy management and psychological energy healing, and construct and restore psychological energy and physiological energy with high concentration activities such as mindfulness, meditation training and artistic creation and regular life rhythm, so as to extend their subjective time experience. For educators and professional mental health people, it is necessary to provide personalized strategies in combination with individual time view types to help different groups balance their own pressure and anxiety. From the perspective of academic research, this paper once again explains the importance of interdisciplinary integration. It is difficult for a single discipline to fully explain the complexity of time perception, and the integration of psychology, these and energy research provides systematic support for the ubiquitous time frame in modern society. The questionnaire and independent research methods in this paper provide a reference model for future empirical research, which is helpful to deepen the study of time perception differences among different groups of people with different ages, cultures and lives. The sense of time acceleration is not only a sign of the accelerated pace of modern life, but also the result of psychological pressure and energy overdraft. Through interdisciplinary understanding and targeted intervention, individuals can recover the "slow time" experience, thus improving life satisfaction, mental health and creativity. Future research can further combine physiological indicators (such as EEG and circadian rhythm monitoring) with long-term longitudinal data to verify the actual effect of energy management and attention training in alleviating the sense of time acceleration, thus transforming theoretical findings into operational daily strategies.

5.1. Limitations & Future Research

The hypothesis put forward in this paper is supported by some data, but it still has some shortcomings. On the one hand, the scale and representativeness of the sample need to be improved. The data of 164 questionnaires collected in this paper is limited, and it can't fully represent a wider range of people by convenient sampling. In addition, considering that the research methods used in this study are convenient sampling and cross-sectional research design, it will have a certain impact on the universality of the research results, thus limiting the feasibility of deducing causality from observed correlation. Therefore, it is necessary to be cautious in the interpretation of the correlation between psychological pressure, media utility and time perception, and it is impossible to directly infer the causal relationship.

In the future, we should expand the samples as much as possible with the labels of regions and occupations to enhance the universality of the research. Secondly, the data in this paper focus on a single cultural and regional background, without cross-cultural comparison. In fact, different social rhythms and cultural values will also have a significant impact on individual time perception. This study is a one-off cross-sectional survey, which fails to fully capture the dynamic development process of time perception in different life stages or social environment changes. In the future, longitudinal follow-up research may be used to reveal the evolution track of time perception. In addition, in the study of the relationship between "energy level" and time perception, this paper only stays at the psychological level, but fails to start from physiological indicators such as heart rate, brain waves and cortisol levels. In the future, we can combine the psychological and physical dimensions to build a more three-dimensional analysis model.

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Declaration of Conflicting Interests

The author declares that she has no competing interests.

Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this manuscript, the author(s) did not employ any of the Generative AI and/or AI-Assisted technologies for Language refinement, drafting background section and did not perform any Task of the technology.

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Appendix: Survey Questionnaire

Uniform Scale Instructions: Unless otherwise specified, all scales use a 5-point Likert scale

(1 = Strongly Disagree/Never, 5 = Strongly Agree/Always).

(I) Basic Information and Grouping (Single Choice)

1. Age: 15–24 / 25–40 / 41–55
2. Status: Student (High School/University) / Working Professional / Other
3. Average Sleep Duration in Past Week: <5h / 5–6h / 6–7h / 7–8h / >8h

(II) Media Usage and Attention (H1 Related)

4. Total daily time spent on short videos or social media in the past week: <1h / 1–2h / 3–4h / 5–6h / ≥7h
5. When studying/working, I often multitask (e.g., chatting while doing homework/work).
6. I am frequently interrupted by phone notifications during tasks.

(III) Psychological Stress and Time Anxiety (H2-related)

7. Over the past two weeks, I often felt significant academic or work pressure.
8. I frequently feel anxious about progress/deadlines.
9. I often feel there aren't enough hours in the day. (Core item for time anxiety)

(IV) Perceived Acceleration of Time (Core Dependent Variable)

10. I often feel that "time flies by quickly."
11. In recent months, I've felt time accelerating more frequently.
12. I feel daily events are more fragmented, as if time is compressed.
13. (Reversed) I rarely experience the sensation that "time is speeding up." (Reversed scoring)

(V) Energy Regulation and Habits (H3-related)

14. Do you have any of the following consistent habits (lasting at least 4 weeks): meditation/mindfulness, artistic creation (painting/music/writing/dance), regular exercise?

Never / Occasionally (≤1 time/week) / 1–2 times/week / ≥3 times/week

15. After engaging in these activities, I find it easier to focus on the present moment. (1=Yes, 2=No, 3=No such habit) (Responses marked 3 are excluded from statistical analysis)

Note: If item 15 is selected as "3," it is treated as missing in corresponding indicators and excluded from averaging.

Biographical Statement of Author(s)

Yixuan Yu (b.2008) is a Grade 12 student and senior at a county high school in Jiangxi, China. She has a passion for art, and explores the sense of acceleration of subjective time in interdisciplinary research.

She combines art with interdisciplinary research such as psychology, physics and energetics, explores the acceleration of subjective sense of time, pays attention to "time anxiety" and provides a unique interpretation from a young perspective.

Try to respond to modern "time anxiety" with artistic academic expression, and build a new understanding path between science and humanities.

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