The Pain Upon Awakening: A Grounded Theory Study of AI-Generated Videos and Childhood Trauma Memories in Youth

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Abstract: *The application of AI generation technology in reanimation images evokes users' deep emotional experiences, especially childhood trauma memories, by dynamically presenting past scenes and characters. Exploring the coping mechanisms of users' emotions and behaviors in this process and their influencing factors helps to understand the interaction law between technology and emotions, and provides theoretical basis and practical guidance for optimizing technology design and psychological intervention strategies. In this study, 20 young users were interviewed in depth, and data were analyzed through open coding, spindle coding, and selective coding using programmed rooting theory. Combined with the SOR model, a model of the influencing factors of users' emotional coping was constructed. Emotional fluctuation and emotional resonance are the two core emotional responses when users watch the resuscitation images. External stimuli triggered emotional fluctuations, and users formed emotional coping strategies through cognitive assessment and technological trust. It was found that users mainly adopt three strategies, namely emotional regulation, emotional release and emotional recovery, to alleviate emotional fluctuations and promote emotional repair. In addition, emotional attachment and trust behaviors play an important moderating role in this process, and users gradually form an adaptive emotion management model, which provides a stable behavioral path for interaction with technology.*

Keywords: Generative AI; Childhood trauma memories; SOR modeling.

1. Introduction

Generative algorithms based on AI technology have been widely used in the field of digital media, especially in the technology of generating moving images, which has shown a significant impact. By accurately recognizing and processing static photos uploaded by users, and combining with the algorithm's independent learning ability, AI technology can generate dynamic images and give static images "life". Nowadays, AI generation technology has become an important part of the digital creative industry, and its potential in the fields of memory restoration, cultural heritage and psychological intervention is gaining attention from academics and the industry[1](Pataranutaporn et al., 2024）.However, as the influence of AI-generated technologies in the public's emotional and memetic life has gradually increased, their potential emotional risks and ethical challenges have raised growing concerns[2](Colello, 2024）.On the one hand, such technologies can evoke positive emotions in users through dynamic resuscitation, helping individuals relive important moments from the past and even alleviate feelings of loss or trauma[3] (Pataranutaporn et al., 2023) On the other hand, when moving images touch on an individual's traumatic memories, they can nevertheless trigger painful emotional responses and even activate deeply buried traumatic memories[4] (Frosh, 2024), caused them new psychological disturbances[5] (Marshall, 2024). While research has focused on the positive applications and hidden threats of generative technologies, the discussion has often downplayed the emotional complexity of the "user experience," especially how users cope with revived traumatic memories through emotional regulation and behavioral responses. Such complex emotional interactions are not only about the functional properties of AI-generating technologies, but also about the deep emotional connections between the technology and its users[6] (Milasan, 2024). Therefore, exploring the diverse impacts of AI-generated moving image technology on users' emotions and its mechanisms is important for a deeper understanding of users' emotional interactions with the technology, as well as for promoting the ethical and humane design of the technology.

In recent years, the application of generative AI techniques in emotion and memory interaction has attracted widespread attention. Especially in the field of moving image resuscitation, generative technology has become a research hotspot because of its far-reaching impact on emotion. Research by scholars at home and abroad mainly focuses on its positive impact (emotional healing) and negative impact (emotional shock). In terms of positive impact, studies have shown that moving images can help users relive positive memories and promote emotional connection and psychological comfort. For example, by reviving images of loved ones, users can experience a sense of belonging and healing emotions[7] (Ling et al., 2024). In terms of negative effects, when moving images involve traumatic memories, they may trigger emotional distress or even reactivate deeply buried traumatic memories, causing psychological distress[8] (Chen et al., 2024). By combing through related studies, it is found that the mechanisms behind positive and negative influence differ significantly. Positive impacts are driven by the following factors: first, users' perception of image authenticity and visual effects, which enhances users' technical acceptance and emotional connection; second, the realization that social support plays a positive role in users' psychological well-being, which further promotes post-traumatic psychological growth by enhancing positive coping styles[9](Zhou et al., 2024).In contrast, the drivers of negative affect are more focused on the deep triggering of painful memories by images. For example, motion-revival images may reinforce users' reproduction of traumatic memories through realistic visual representations, triggering negative emotions such as anxiety or depression[10] (Zhao et al., 2024); furthermore, cumulative risk modeling suggests

that the superimposed effect of childhood trauma significantly increases the probability of users' emotional problems.

Although studies have revealed the important role of generative AI technologies in emotional interactions, the following research gaps still exist: first, existing studies have paid less attention to the diversity of users' emotional responses in the face of traumatic memory revival, such as nostalgia, avoidance, and adaptation, among other complex emotions; second, how the technical characteristics of moving images (e.g., realism and dynamics) contribute to the affective responses has not been systematically revealed; Finally, there is a lack of in-depth research on the moderating effects of different cultural and social backgrounds on users' emotional responses and behavioral decisions. Therefore, current research has preliminarily explored the positive and negative effects of generative AI technologies in emotion-memory interactions, but systematic research on their negative emotional effects and their mechanisms of action is still weak. This study will focus on the emotional response mechanisms and user behavioral strategies of AI-generated dynamic images to revive traumatic childhood memories, trying to make up for the existing research deficiencies and provide theoretical support and practical suggestions for future technology applications.

Based on this, this study adopts a rooted theory approach to focus on the emotional and behavioral responses of youth in the face of AI-generated video revival of childhood traumatic memories, to examine how youth make emotional regulation and behavioral responses during the process of traumatic memory revival, and to explore the factors affecting coping strategies and their interaction mechanisms. Specifically, this study aims to answer the following questions: 1) How do youths generate diverse emotional and behavioral responses when facing AI-generated videos to revive childhood traumatic memories? 2) What factors influence the emotional regulation and coping strategies that youth choose after viewing AI-generated resurgence videos? 3) What role does each influencing factor play in youth's coping with AI-generated videos reviving childhood trauma memories? To this end, this paper conducted in-depth interviews with 20 youths with a high level of AI technology awareness, who frequently use social media platforms in their daily lives and are exposed to photo revival videos based on AI technology. The interviews covered the participants' emotional responses to the reanimation videos (e.g., nostalgia, immersion, distress), the ways they chose to cope with them (e.g., avoidance, adaptation, acceptance), and how the AI-generated video technology impacted perceptions of emotional regulation and traumatic memories. The purpose of this study is to reveal the effects of AI-generated video revival of childhood trauma memories on individuals' emotional regulation and behavioral coping through a case study of a youth group, and then to provide theoretical support and practical suggestions for the design of AI technology in trauma memory management, emotional revival, and social platforms.

2. Research Design

2.1 Research Methodology

This study used a qualitative research methodology to collect data through semi-structured in-depth interviews and used Zagan theory to analyze the data and construct theory. Rootedness theory was proposed by Glaser and Strauss[11] (Glaser & Strauss, 2017), It is a qualitative research method based on data generation theory. Unlike other qualitative research that focuses mainly on the life experience of individuals, rooted theory emphasizes the abstraction of subject experience into theory through systematic analysis and reveals the causal relationship between social context and behavior. This approach is particularly suitable for exploring the emotional and behavioral mechanisms of users in complex situations.

Zagan theory has developed over time to form three major schools of thought: classical zagan theory, procedural zagan theory, and constructive zagan theory. This study adopts procedural rooting theory as the analytical framework. Programmatic rooting theory advocates constructing theories through systematic coding of raw data, while combining the researcher's experience with the concepts found in the data, so as to form a systematic explanation of complex social phenomena. The selected topic of this study focuses on the emotional and behavioral mechanisms under the scenario of generative AI technology to revive traumatic childhood memories, while the related field has not yet formed a perfect theoretical model, and thus the procedural rooting theory can effectively meet the research needs. In the theoretical analysis, this paper incorporates the SOR model (Stimulus-Organism-Response) as an analytical framework. The SOR model was proposed by Mehrabian and Russell[12] (Mehrabian & Russell, 1974), It is a theoretical tool that has been widely used in user behavior research. The model argues that stimuli (Stimulus) in the external environment will further trigger an individual's behavioral response (Response) by affecting the individual's emotion, cognition, and mental state (Organism). In this study, generative AI moving image technology is used as a stimulus (e.g., dynamic realism, immersive effect, etc.), and the user's emotional response (e.g., nostalgia, pain, or anxiety) when faced with a resurgent image is regarded as an Organismal State, which is ultimately manifested as a Behavioral Response such as Acceptance, Avoidance, or Adaptation.

Based on the analytical steps of procedural rooting theory, this paper abstracts theoretical concepts from interview data through level-by-level coding and analyzes the role of generative AI technology in stimulating emotional responses and user behavioral mechanisms around the SOR model. The research focuses on the triggering mechanism of dynamic image recurrence on users' emotional response, the mediating role of emotion, and the dynamic process of final behavioral decision-making. This study aims to reveal the emotional and behavioral mechanisms of users in reviving traumatic childhood memories through theoretical constructs, providing theoretical support for the study of the emotional effects of generative technologies and the design of future technologies.

2.2 Data Collection

This study focuses on young users who have high experience of childhood traumatic memory revival, and comprehensively explores their emotional responses and behavioral coping strategies in the face of AI-generated video revival of

childhood traumatic memories. To ensure the representativeness and usability of the interview data, the study recruited young respondents between the ages of 18 and 35, and the respondents must have had at least one experience of using AI-generated technology to revive old photos or videos. A total of 30 respondents were received back for the study. During the screening process, it was ensured that respondents had a variety of occupational backgrounds, educational levels, and traumatic memory revival experiences in order to fully cover all types of emotional and behavioral responses. Ultimately, 20 eligible respondents were screened. Interviews were conducted using a combination of online (telephone) and offline (face-to-face) methods, with each interview lasting 30 to 45 minutes.

Prior to the interviews, the researcher had explained in detail to the interviewees the topic and purpose of the interviews and the ethical requirements of the study, and permission for audio recording was obtained. The interviews were conducted in strict accordance with the preset procedures to ensure the integrity and consistency of the data. After the interviews, the researcher transcribed and organized the audio recordings and deleted irrelevant information, resulting in 20 copies of text data totaling 42,000 words. Prior to the interviews, the researcher collected the respondents' gender, age, education, occupation, and their use of AI-generated video apps through interviews at recruitment. The interviews were organized around the following themes: 1) how do the respondents understand the use of AI-generated video in the revival of childhood trauma memories; 2) does AI technology bring about emotional distress or pain when reviving childhood trauma memories? How does this pain relate to their trauma history; 3) how much do respondents trust AI-generated video technology? Do they believe that AI can realistically recreate their childhood trauma memories; 4) How do respondents regulate their emotional responses? Are there behavioral strategies for emotional avoidance, emotional regulation, or emotional acceptance?

2.3 Data analysis

Data analysis is a key step in qualitative research to distill theory from data. In this study, interview data from 20 young users were systematically coded and analyzed through three levels of coding (open coding, spindle coding, and selective coding) using a procedural rooting theory approach. The coding was done by a coding team that included two master's degree students. To ensure the accuracy and consistency of the analysis process, the research team provided theoretical sensitivity training to the coding team, covering relevant concepts, influencing factors and theoretical frameworks of emotional and behavioral coping.

3. Research Findings

3.1 Open coding

Open coding is the process of disassembling raw interview data and distilling concepts and categories through analysis and comparison. At this stage, the study conceptualizes and labels statements that express similar meanings, gradually abstracting initial concepts from the raw data. To ensure the objectivity of the analytical process and the credibility of the results, the study conducted systematic initial coding of 20 interview texts (about 42,000 words in total) using the qualitative analysis tool NVivo 15 with manual coding.

Based on the gradual generalization and integration of the data, the research team refined 23 initial concepts (e.g., "emotional volatility," "privacy concerns," "trust deficit," etc.). In order to further simplify and merge similar concepts, the study grouped the initial concepts into 15 categories, including "emotion fluctuation", "emotional resonance", "emotion regulation" "privacy concerns", "technology trust", etc., as shown in Table 1.

Table 1: Open coding results

Scoping (B)	Initial Concepts (A)	Primary Sources (partial)
Emotional response (B1)	Anxiety (A1)	"When I saw the video of the resurrection, I felt very anxious and recalled unpleasant experiences from my childhood."
	Pain (A2)	"Seeing videos of resurrections reminds me of painful times as a child and I feel emotionally broken."
	Guilt (A3)	"Every time I see a resurrected loved one, I always feel guilty that I didn't take better care of them while they were alive."
	Negative feelings (A4)	"Resurrection videos make me feel uncomfortable and remember painful past."
Emotional empathy (B2)	Nostalgia (A5)	"When I see resurrection videos, I can't help but miss the time I spent with my parents as a child."
	Emotional Recovery (A6)	"The video of the resurrection made me re-experience the happy times when I was a child, when we were still together."
	Emotional Empathy (A7)	"Feeling a long-lost warmth when I see my loved ones resurrected, as if they are back in my life."
Privacy concerns (B3)	Privacy Breach (A8)	"I'm a little concerned if the technology is giving away my personal privacy, especially when resurrecting personal memories."
	Data Security (A9)	"I'm concerned about whether the video could be abused and used inappropriately by a third party."
Lack of trust (B4)	Lack of Trust (A10)	"I'm not sure if this technology is really safe and will protect my private information."
Technology Dependency (B5)	Technology Dependency (A11)	"I'm afraid I'll become too dependent on the technology and lose touch with real life."
Technology Perception (B6)	Sense of Magic of Technology (A12)	"I think this technology is amazing, it revives my past and brings a sense of hyper reality."
	Technology Transparency(A13)	"I want the technology to be transparent and allow me to learn more about how my data is processed and used."
Trust (B7)	Trust in Technology (A14)	"I believe this technology can authentically restore memories, and even allow me to feel a long-lost sense of familial affection."
Emotional Regulation (B8)	Emotional Avoidance (A15)	"Although the resurrection technology moves me, I try to avoid watching videos that trigger negative emotions."
	Emotional Regulation Strategy (A16)	"Whenever the emotions become too overwhelming, I choose to pause, take deep breaths, or distract myself."

Emotional Healing (B9)	Emotional Healing (A17)	"The resurrected videos make me feel an emotional healing I haven't felt in a long time, as if they've soothed my long-suppressed pain."
Emotional Transformation (B10)	Emotional Transformation (A18)	"By watching the resurrected videos, I am able to transform some of my negative emotions and gradually come to terms with past trauma."
Privacy Concern (B11)	Privacy Concern (A19)	"I'm afraid of becoming overly reliant on technology, especially when it involves personal privacy and emotional resurrection."
Emotional Attachment (B12)	Emotional Attachment (A20)	"Through the resurrection videos, I feel a stronger emotional attachment to the past."
Psychological Comfort (B13)	Psychological Comfort (A21)	"Watching resurrected loved ones gives me a certain sense of psychological comfort, especially when I feel lonely."
Behavioral Expression (B14)	Emotional Expression (A22)	"I cry when I watch the resurrection videos—it's a natural outpouring of emotion."
Emotional Regulation Response (B15)	Emotional Recovery (A23)	"Sometimes, the resurrection videos help me come out of pain, and my emotions gradually recover."

Table 2: Spindle coding results

Main Category	Subcategory	Definition
Emotional Fluctuation	Anxiety	Participants commonly exhibited anxiety when facing resurrection technology, feeling nervous and uneasy after recalling traumatic memories.
	Pain	Painful emotional reactions were common; many participants experienced overwhelming emotional breakdowns during the video resurrection.
	Guilt	Participants expressed deep guilt over not having better cared for deceased loved ones, with emotional distress lingering.
	Negative Emotion	The resurrection videos triggered general discomfort, pain, or heavy emotional responses.
	Nostalgia	Participants showed nostalgic feelings toward past moments, especially those shared with family.
Emotional Connection	Emotional Recovery	Through the videos, participants revisited emotional experiences, restored intimate bonds, and alleviated emotional trauma.
	Emotional Resonance	The resurrection videos evoked emotional resonance, helping participants reconnect with familial love and ease their grief.
Privacy Concerns	Privacy Leakage	Participants worried that resurrection technology might lead to privacy breaches, particularly in handling personal memories and data.
	Data Security	Concerns about data misuse arose, with participants fearing potential risks related to technological data handling.
Trust in Technology	Awe of Technology	Participants expressed amazement at the surreal realism of the technology and viewed the experience as novel and immersive.
	Technical Transparency	Participants desired transparent operations and clearer understanding of data usage to build trust.
	Trust in Technology	Despite privacy concerns, some participants still chose to trust the technology for its emotionally reparative potential.
Emotional Regulation	Emotional Avoidance	To avoid painful experiences, participants tended to refrain from watching resurrection videos to prevent re-triggering trauma.
	Regulation Strategies	Participants adopted methods such as meditation or distraction to regulate negative emotions and psychological pressure.
Emotional Recovery	Emotional Healing	The technology helped participants regain emotional stability, alleviating trauma-related distress and restoring balance.
Emotional Transformation	Emotional Processing	Participants used the technology to convert negative emotions into positive responses, gradually accepting and digesting past trauma.
Privacy Risk	Privacy Concerns	Participants expressed strong concerns about potential privacy risks during the use of resurrection technology, especially regarding personal data.
Emotional Attachment	Emotional Immersion	Participants developed deeper emotional connections with deceased loved ones, easing loneliness and trauma through immersion in the videos.
Emotional Expression	Emotional Release	Through crying or other forms, participants naturally expressed their emotions in response to the resurrection videos.
Emotional Stability	Emotional Return	The technology helped participants gradually recover from emotional collapse and return to a more stable emotional state, accepting past trauma.

3.2 Spindle code

Principal axis coding is the process of further integrating the categories formed by open coding into principal categories at a higher level of abstraction to reveal the logical laws in the data. In order to more comprehensively explain the emotional and behavioral coping mechanisms of young users in the process of reviving traumatic childhood memories in AI-generated videos, this study combined the theory of the SOR model with a comparative analysis and generalization of the 20 categories formed by open coding, and finally summarized 11 main categories: video presentation, privacy concern, technical transparency, emotional fluctuation, emotional empathy, cognitive transformation, emotional attachment, trusting behaviors emotional regulation, emotional release, and emotional recovery.

The main domains cover the whole process of users' emotional experience, cognitive assessment and coping strategies when facing external stimuli, which lays a theoretical foundation for the construction of an emotional and behavioral coping model. The meanings of the main axis coding process and its corresponding categories are detailed in Table 2.

3.3 Selective coding

In the selective coding stage, the main categories formed by the principal axis coding were further organized to construct the logical relationship between the main categories. The study formed a complete "story line" around the core category "emotional and behavioral coping strategies", and connected the core category to other categories through the "story line" to show the young users' emotional coping process and main

relationships in the AI-generated video revival of traumatic childhood memories (see Table 3).

The analysis showed that "emotional and behavioral coping strategies", as the core category, was able to dominate all the main categories. Specifically, under the influence of external stimuli such as video presentation and privacy concerns, users will have emotional experiences such as emotional fluctuations and emotional resonance, and form emotional assessments based on cognitive transformation and technological trust, so as to adopt behavioral strategies such as emotional regulation, emotional release, and emotional recovery. At the same time, the process will be influenced and regulated by emotional attachment and trust behaviors, forming a continuous emotional coping pattern. The analytical results of selective coding reveal the typical relationship of each main category in the coping model, which provides theoretical support for constructing the SOR model path.

Table 3: Selective coding results

Pathway	Relational Structure	Pathway Description	Representative Quote
Video Display → Emotional Fluctuation	Causal Relationship	The AI-generated resurrection videos triggered traumatic memories in participants, leading to emotional fluctuations such as anxiety and pain.	"After watching the video, I felt extremely anxious and distressed, so I started doing deep breathing to avoid continuing."
Privacy Concern → Trust in Technology	Causal Relationship	Concerns about privacy breaches undermined participants' trust in the resurrection technology.	"Although the technology moved me, I constantly worry that it might expose my private memories."
Technical Transparency → Trust in Technology	Causal Relationship	Enhanced transparency increased participants' trust in the technology, reducing privacy concerns and encouraging acceptance.	"If the technology could let me better understand how my data is used, I would be more willing to trust it."
Emotional Fluctuation → Emotional Regulation	Causal Relationship	After experiencing emotional disturbance, participants adopted strategies such as avoidance or meditation to regulate their emotions.	"When the emotions got too heavy, I stopped and did some meditation. Gradually, I began to accept the memories."
Emotional Resonance → Emotional Recovery	Causal Relationship	Emotional resonance helped participants alleviate emotional turbulence and gradually regain emotional balance.	"The video reminded me of the time spent with my family and gave me a warm feeling. I was able to recover from that."
Emotional Fluctuation → Emotional Release	Causal Relationship	Stimulated by emotional turbulence, participants released suppressed emotions, which facilitated emotional relief and healing.	"While watching the video, I cried, and that allowed me to release a lot of suppressed emotions."

3.4 Theoretical saturation test

To ensure the reliability and validity of the study, the coding results were tested for theoretical saturation in this study. First, the researcher screened the interviewees according to the criteria of gender, age, educational background, occupation, and diversity of childhood traumatic experiences to ensure maximum diversity and representativeness of the sample. Second, for the core category of "emotional and behavioral coping strategies," the study organized focus group interviews with five respondents to further supplement the detailed descriptions of the users' emotional experiences and behavioral strategies in relation to the resuscitation images. The research team conducted three levels of coding on the material from the focus group interviews, which resulted in no new concepts or categories being generated.

In the absence of new coding results or categories, the study confirmed that the theory had reached saturation. The concepts, categories, and model structure of this study were stable and logically consistent, providing reliable support for the theoretical construction and practical application of emotional coping mechanisms.

4. Modeling and Interpretation

By distilling and integrating concepts and categories through tertiary coding, the study generalized that young users' affective and behavioral responses in AI-generated video revival of traumatic childhood memory scenarios included affective regulation, affective release, and affective recovery. The main influencing factors of users' emotional and behavioral responses include visual presentation of the video, privacy concerns, technological transparency, emotional experience, cognitive assessment, and technological trust.

The SOR theoretical model suggests that human behavior is a behavioral response resulting from changes in an individual's internal emotional and cognitive states under the effect of external environmental stimuli. In this study, we believe that the emotional and behavioral responses of young people in the face of reviving traumatic childhood memories are a combination of external stimuli and internal emotional and cognitive interactions, which can be interpreted from the three levels of "stimulus-organism-response". Among them, video presentation, privacy concern and technology transparency constitute external stimuli (S); emotional fluctuation, emotional resonance, cognitive assessment and technology trust constitute individual dimensions (O); and emotional regulation, emotional release and emotional recovery are the final behavioral responses (R). Based on this, this paper proposes the "Emotional Behavioral Response Model for Youth Traumatic Memory Recovery" (see Figure 1).
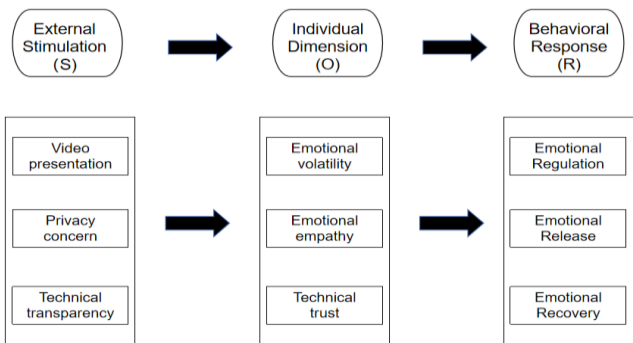

Figure 1: Affective-behavioral response model for youth traumatic memory recurrence

4.1 Vision, Privacy and Trust: External Stimuli that Influence User Behavior

4.1.1 Video Presentation

Privacy concerns are important external stimuli that influence users' trust and behavioral responses. Users who watch and use AI-generated videos are often concerned that their private memories and data may be compromised or misused. Such concerns can reduce users' trust in the technology and even lead them to adopt avoidance strategies and reduce their exposure to replicated images.

The interview data revealed that privacy concerns have a significant impact in the users' decision-making process. One interviewee (D8) mentioned, "I am concerned about whether the resurfacing video is really safe and whether an inappropriate person will use the data to snoop on my privacy." Users' lack of knowledge about the security of the technology makes them uneasy and wary of using the technology in question. This privacy anxiety not only affects users' emotional state, but also weakens their acceptance of the technology[13] (Makhortykh et al., 2023)

Some users took protective measures due to privacy concerns, such as turning off data authorization or avoiding sharing private images. One respondent (D9) stated, "Whenever I use this technology, I am careful not to upload too many personal photos for fear that the data will be misused." Privacy concerns drive users to exhibit a higher level of risk awareness when confronted with resurfaced images, which influences their behavioral decisions.

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4.1.3 Technical Transparency

Technology transparency is an important factor that affects users' trust. When users are able to clearly understand how the technology operates, the data processing flow and the privacy protection mechanism, their trust in the technology increases significantly. On the contrary, when the mechanism of technology operation is not transparent, users will have a sense of uncertainty, which will reduce their trust and acceptance of the technology.

Respondents generally agreed that they would feel more secure in using the technology if it were more transparent. One respondent (D10) mentioned, "I would be more willing to trust technology if it told me how my data was being processed." Increased transparency allows users to make informed usage decisions, reducing concerns about privacy breaches. Additionally, users' increased trust in technology leads to a heightened sense of emotional security.

Technology that lacks transparency often creates negative emotions and skepticism among users. Some users mentioned that without knowing the details of data processing, they had a strong sense of distrust towards the technology and even believed that the technology might misuse their personal data. One respondent (D11) stated, "I can't be sure if the data is really safe, which makes me always skeptical about the technology." Therefore, technology transparency is crucial to increase user trust and reduce privacy concerns.

4.2 Affective Fluctuations and Behavioral Strategies: The Driving Role of Internal Dimensions

When users face AI-generated videos to revive traumatic childhood memories, external stimuli often influence their behavioral strategies through internal emotional experiences such as emotional fluctuations and empathy. The "Organism" dimension in the SOR model, i.e., the user's emotional and cognitive states, is the core driver of behavioral responses. In this study, affective fluctuation and affective empathy constitute the two main components of users' emotional experience, which affect users' immediate response and long-term emotional adjustment, respectively.

4.2.1 Emotional Turmoil

Emotional fluctuation is the most direct emotional response of users when they are exposed to resurfacing images. The visual and memory elements in the image will strongly stimulate the user's emotions, causing them to recall past traumatic experiences and triggering negative emotions such as anxiety and pain. Such fluctuations are usually accompanied by drastic changes in mood, resulting in the user's inability to maintain psychological equilibrium for a short period of time.

A number of interviewees mentioned in the interviews that they experience strong emotional impact when watching the resurrection videos. One interviewee (D7) stated, "Seeing that resurrection video made me feel very anxious, as if I was instantly returned to the painful scenes of my childhood." This emotional fluctuation plunged the user into the past emotional experience and made it difficult to get rid of the obsession with the traumatic memory. Another interviewee (D2) mentioned, "When the images appeared, my heart clenched, my emotions instantly broke down, and I could not control myself at all."

However, emotional volatility is not only reflected in negative

emotions. Some users also felt nostalgic and moved when they saw their former loved ones or happy times in the resurrection images. These kinds of positive emotional fluctuations, although not as strong as negative emotions, can also influence users' behavioral strategies. One respondent (D5) stated, "Even though the images made me sad, I couldn't help but feel a twinge of warmth when I saw my parents' appearance in the images."

Emotional volatility is a key driver that influences users' coping behavior. When the emotional fluctuations are too intense, users tend to adopt emotional regulation or avoidance strategies to avoid further loss of emotional control; whereas when the emotions are more moderate, users may try to adapt to or accept the emotional stimuli brought by the images.

4.2.2 Emotional Resonance

Emotional resonance is the positive reaction that occurs when a user re-experiences family, friendship or other warm emotions in a resurrected image. This empathy is usually based on a deep emotional connection between the user and the content of the image, which helps to alleviate the negative effects of emotional fluctuations and promotes emotional recovery and balance.

The study found that the moving images and familiar scenes in the resuscitated images enabled users to reconnect with past emotions. One respondent (D3) mentioned, "Seeing my father smiling in the image, I suddenly felt a long-lost warmth, as if he was still with me." This emotional resonance helped users temporarily disengage from negative emotions and focus instead on the emotional comfort that the image brought.

In addition, emotional resonance can prompt users to rethink and accept past experiences. Some users gradually shifted their attitudes toward the traumatic event and reduced their negative evaluations of the memory during the empathic experience. One respondent (D6) stated, "Seeing the scenes in the images, I began to understand what my parents did at the time and slowly felt that things were not so terrible." Cognitive transformation further strengthens the restorative function of emotional empathy, making users more at peace with traumatic memories.

Emotional empathy not only serves to relieve current emotional stress, but also promotes long-term psychological adjustment for the user. By repeatedly experiencing resonant emotions, users gradually build up the ability to adapt to resuscitated images and reduce the intensity of future emotional fluctuations.

4.3 Regulation, Release and Recovery: Emotional Coping Strategies of Young Users

Coping theory suggests that[15] (Kim & Duda, 2003), Individuals, when faced with external stimuli or stressors, adopt appropriate strategies to alleviate emotional fluctuations and stress based on their cognitive assessment of the stimuli and self-control. This study categorizes young users' emotional coping strategies into three types: emotional regulation, emotional release, and emotional recovery.

4.3.1 Emotional Regulation

In the face of AI-generated recurrence images, users often experience dramatic emotional fluctuations, especially when the images touch on traumatic childhood memories. In order to cope with the negative emotions brought about by recollection recurrence, many users adopt proactive emotion regulation strategies to control their emotional responses in order to alleviate psychological distress. This process usually involves methods such as pausing viewing, distraction, and meditative relaxation to restore inner balance.

Interview data revealed that many respondents choose to alleviate their emotions by pausing or avoiding them when they feel overwhelmed. Interviewee D1 mentioned, "Whenever my emotions become heavy, I will stop and take deep breaths, which will calm me down a little." This brief interruptive behavior allows users to regain control of their emotions before the emotional swings get out of hand. In addition, some of the interviewees would change their environment or engage in distracting activities (e.g., listening to music, watching other relaxing videos) to get rid of the emotional distress caused by the resurgent images when their emotions reached a critical point. Respondent D4 stated, "If the images make me too uncomfortable, I will immediately change the content and listen to some music to relax myself."

In addition to physical pauses and environmental changes, some users utilize psychological conditioning tools, such as meditation and deep breathing, to reduce the intensity of negative emotions. Interviewee D3 mentioned in the interview, "I often do meditation during mood swings, which allows me to relax and be comfortable with the feelings that come with resurfacing images." Technology enables users to self-regulate without relying on external conditions, thus avoiding emotional outbursts.

The implementation of emotion regulation strategies is not only to alleviate short-term mood swings, but also to help users gradually improve their emotion management skills[16] (Kollias, 2024). When users form an effective regulation pattern after facing recurrent images many times, they can also handle emotional reactions faster and smoother when facing similar situations in the future. This process exemplifies the dual function of emotion regulation: on the one hand, it can quickly relieve immediate emotions through pausing, shifting, and meditating; on the other hand, the continuous practice of emotion regulation also prompts users to gradually accumulate experience in emotion management and enhance psychological resilience.

4.3.2 Emotional Release

When confronted with resurgent images of childhood trauma, many users experience emotional shock and volatility. When some users are unable to calm their minds by regulating their emotions, they use emotional release to relieve their inner stress and pain. Emotional release is a spontaneous coping strategy, in which the user, under strong emotional stimuli, cries, confesses or other forms of venting pent-up negative emotions, thus obtaining short-term emotional relief and psychological relief.

When the resurrection images evoke deep traumatic memories, many users find it difficult to contain their emotions[17] (Chung et al., 2024). One respondent (D2) described, "I cried out when I saw the video of the resurrection, which allowed me to release the pain that had been pent up for a long time." This crying behavior is a typical form of emotional catharsis; through the release of tears, users feel emotionally relieved in a short period of time. Another respondent (D5) mentioned, "At that moment, I couldn't control myself anymore and cried very hard in pain. But after crying, I felt much lighter in my heart, like some kind of burden was lifted."

Interviewer's memory emotion release is not only emotional catharsis, but also has important psychological functions. First of all, the release of negative emotions helps to reduce the psychological pressure of users and avoid further emotional collapse brought about by emotional accumulation. Many users, when faced with resurgent images, their emotions will quickly accumulate to an unbearable level, and emotional release becomes an important way to relieve this emotional backlog at this time. Secondly, after releasing emotions, the user's psychological state usually becomes more balanced and stable[18] (Javanbakht et al., 2024). Some users mentioned that after releasing their emotions, they were able to face the memory and emotional impact of the images more rationally. One respondent (D8) stated, "After crying, I started to calm down and rethink the memories and felt much better than before."

In addition, confiding is also a common way of releasing emotions. Some users choose to communicate their feelings with people close to them after watching the resurrection videos, so as to get psychological support and empathy through interpersonal interaction. Respondent D9 mentioned, "Sometimes I talk to my friends about how those videos make me feel, which makes me feel like I'm not alone in facing things." By confiding, users partially transfer their inner emotional load to each other, thus reducing their own emotional stress.

4.3.3 Emotional Recovery

Emotional recovery is the process by which users gradually return to emotional equilibrium through empathy and cognitive transformation after mood swings and emotional release. This strategy helps users re-establish understanding and acceptance of traumatic memories and stabilize their psychological state. Resurrection images often not only bring about negative emotions, but also stimulate users' emotional resonance for their loved ones and good times, thus alleviating emotional distress.

Interview results show that many users initially experience distressing emotions due to traumatic memories after viewing resurrection images, but as empathy develops, such negative emotions are gradually replaced by warm memories. One interviewee (D3) mentioned, "The video reminded me of my family again, and at that moment I felt warmth and seemed to recover some from the pain." Through the moving images in the video, users reconnected emotionally with their past experiences, and this emotional resonance served as an emotional restoration to some extent.

On the basis of empathy, users usually undergo cognitive transformation, gradually adjusting the way they understand traumatic memories. When initially confronted with resuscitation videos, many users view the images as a reproduction of trauma, and their emotions tend to get out of control. However, through continuous emotional experience and reflection, users gradually viewed the past from a new perspective. One interviewee (D6) stated, "At first I had a hard time accepting the images, but then I tried to see things from my parents' perspective, and slowly I began to understand and accept my past experiences." This cognitive transformation enabled users to let go of their negative evaluations of the event, view it as a growth experience, and reduce their emotional distress over the traumatic event.

In addition to cognitive transformation, the emotional recovery process was accompanied by positive emotional experiences. Some users mentioned that after viewing the resuscitation images, they recalled the good times they had with their loved ones, thus feeling emotional comfort and warmth. Respondent D4 mentioned, "Watching those resuscitation images reminded me of the happy times I had with my parents when I was a child, and such memories made me feel warm inside." Positive emotional experiences help users emerge from emotional lows and promote psychological restoration and balance.

Emotional recovery is usually a gradual process of adaptation. As users come into contact with the resuscitated image many times, they gradually reduce their emotional sensitivity to the image and no longer experience frequent and violent mood swings. This adaptation process enables users to be more relaxed and stable when facing similar situations.

5. Conclusion

Focusing on the emotional and behavioral responses of youth during the process of reviving traumatic childhood memories in the face of AI-generated videos, this study uses the framework of rootedness theory and the SOR model (Stimulus-Organism-Response) to reveal the interactive mechanisms between external stimuli, internal emotional experiences, and behavioral strategies. It was found that stimuli such as visual presentation, privacy concerns and technical transparency in AI-generated videos directly trigger users' emotional fluctuations. Users tend to adopt coping strategies such as emotional regulation, emotional release and emotional recovery after emotional fluctuations. Emotional fluctuations are mainly manifested as negative emotions such as pain and anxiety, while emotional empathy helps users relieve emotional stress and promote psychological recovery by reliving positive memories. Emotional responses further influence users' trust, acceptance and behavioral decisions about the technology.

The theoretical contribution of this study is to further enrich the application scenarios of the SOR model and expand the research perspectives of AI generative technologies in the field of user emotion management. While previous studies have mainly focused on the positive or negative single effects of generative technologies, this study proposes a systematic emotional response model by revealing the dual roles of emotional fluctuations and empathy. This model integrates

users' diverse emotional experiences and strategic choices in traumatic memory retrieval from the level of "external stimulus-internal emotion-behavioral response". In addition, the study deeply analyzes the key roles of visual effects and technological transparency in the construction of emotional fluctuation and trust, which provides new ideas for future theoretical construction.

At the practical level, the research results are valuable for the application of AI generation technology in the field of mental health and emotion management. First, by optimizing the realism and dynamic effects of video presentation, it can effectively reduce the negative emotional fluctuations of users when watching resuscitated images. Second, enhancing the transparency of the technology can help alleviate users' concerns about privacy leakage and enhance their trust in the technology, thereby increasing its acceptance. Again, the study points out that emotional resonance has the potential for emotional healing, providing theoretical support for the design of psychological intervention and traumatic memory repair programs based on AI technology. In the future, generative AI technology can be widely used in the fields of psychotherapy, emotional support and cultural heritage to provide personalized emotional services to users.

Although this study has achieved certain results at both the theoretical and practical levels, there are still shortcomings. First, the study sample mainly focused on young users with a high level of technological awareness, which may limit the generalizability of the results and make it difficult to fully represent user groups of different ages, cultures and social backgrounds. Second, the study used qualitative interviews, which, although deeply revealing the mechanism of users' emotional responses, lacked quantitative analysis to present the temporal changes and intensity differences of emotional fluctuations. In addition, the specific effects of technological features (e.g., visual elements and dynamic effects) on emotional responses were not dismantled in detail in the study, and future research could explore this aspect in greater depth.

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