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Digital Media Engagement and Health Communication: Examining How Different Narrative Frameworks Shape User Responses to Attachment Style Content on YouTube

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Abstract. This study explores how different narrative structures influence users' meaning-making and emotional responses to psychological concepts on social media, focusing on attachment theory videos on YouTube. As psychological concepts have increasingly moved from academic settings into everyday online discussions, users may actively interpret these concepts through their own experiences, relationships, and identities. However, limited research has examined how different narrative frameworks shape the content of these responses. This study analyzed 14,104 comments from nine YouTube videos, which were categorized into three narrative frameworks: Personal Statement, Lecture, and Cartoon. After removing child comments, 10,894 top-level comments were analyzed using Machine-Driven Classification of Open-Ended Responses (MDCOR) and Sentiment and Emotion Network Analysis (SENA), combined with human interpretation. Topic modeling identified four major themes: Childhood and Personal Experience Disclosure, Attachment-based Self-interpretation, Social Reflection through Psychological Concepts, and Emotional Reactions and Stance Expression. A chi-square test showed a statistically significant association between narrative framework and topic distribution ($\chi^2 = 467.96$, $p < .01$). Cartoon narratives were more strongly associated with childhood and personal experience disclosure, while Personal Statement and Lecture narratives were more associated with emotional reactions and stance expression. Overall, the findings suggest that narrative structures can shape how audiences interpret, personalize, and emotionally respond to psychological concepts online.

Keywords: Attachment Theory, Narrative Structure, Social Media, Psychological Concepts, Mental Health Communication

1. Introduction

Originally developed by John Bowlby in the 1950s, attachment theory sought to explain how early emotional bonds between infants and caregivers contribute to human survival and psychological development [1, 2]. Based on Bowlby's theoretical framework, Mary Ainsworth's Strange Situation

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experiment identified three major infant attachment patterns: secure, insecure-avoidant, and insecure-anxious/ambivalent attachment, while disorganized attachment was later introduced by Main and Solomon [3, 4]. The theory had been extensively studied.

Attachment theory was later applied to adult romantic relationships. Kim Bartholomew and Leonard Horowitz suggested a four-type model of adult attachment, which was based on the two dimensions of self and others [5]. Researchers came up with adult attachment models that theorized how individuals related to each other in terms of such dimensions as anxiety and avoidance [6]. With the emergence of psychometric measurements and neuroscience, research on attachment has further demonstrated variations among attachment styles in terms of emotional regulation, stress responses, interpersonal behaviors, and neural processes in the brain and social and emotional processing.

Attachment styles are relatively accessible to everyday interpretation compared to many other psychological constructs because they offer an explanation for common interpersonal experiences, including feelings of closeness, dependency and relationship dynamics. As attachment research progressed from infant-parent relationships to adult romantic relationships, attachment styles became more relevant to people's reflections on their own relationships. Moreover, the classification of attachment patterns into relatively distinct types (secure, anxious, avoidant) simplifies complex psychological theories into more digestible terms. This has enabled the transfer of ideas about attachment from academia to popular psychology.

With the growth of psychological ideas outside of academia, attachment styles became part of mainstream discussion about personality, relationships and self-knowledge, particularly on social media. "Concept creep" is the ongoing broadening of professional concepts - and their subsequent infiltration into everyday life [7].

There are positive and negative effects of the popularization of psychological concepts. On the one hand, the greater availability of psychological knowledge may enhance the awareness of people about mental health and make them more willing to identify psychological challenges and seek proper assistance. This practice helps in enhancing general literacy in mental health by raising awareness of people on psychological concepts. Conversely, as academic ideas are imported into daily language, their definitions can be simplified, generalized or lose their theoretical backgrounds. With the incorporation of psychological terms into common language, people can apply these notions as simplistic models to understand complicated feelings, behaviors, and interpersonal experiences. On the cognitive side, simplified psychological descriptions frequently reflect the Barnum effect [8]. As a result, people may interpret ordinary interpersonal experiences through simplified psychological categories. On the social side, adopting psychological labels can provide individuals with descriptions of emotions, behaviors, and interpersonal experiences, transforming abstract psychological concepts into tools for self-understanding and identity construction [9, 10].

Therefore, social media offers an opportunity for these processes to be openly shared and debated by users. Social media platforms use different forms of psychological concepts because of their different media attributes. YouTube is multimodal and has long videos. (YouTube's multimodal nature enables psychological concepts to be presented in various narrative forms, such as personal narratives, teaching and learning, and imagery. These modes of presentation may not just convey the same information; they may also present psychological concepts in different ways and shape how viewers perceive and connect them to their own lives.)

In contrast to the short videos of Tik Tok or text-based format of Twitter, YouTube combines visuals, voice and emotional expression, which allows it to convert abstract psychological concepts into relatable situations. The comment sections and community features of YouTube enable users to

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provide their own experiences, relationship, and self-identification when watching videos [11] thus fulfilling the need of psychological education [12] and creating empathy among the users [13].

Thus, YouTube comments offer a valuable platform to explore the ways in which viewers interpret and translate psychological concepts into their own situations. In contrast to quantitative measures, like views, likes or shares, comments include the direct statements of users about their emotions, experiences, and thoughts. These discussions created by users can be used to understand how audiences negotiate meanings around psychological ideas and relate online information with their identities and relationships. Comments may be the interaction and an act of interpretation, reconstruction of psychological notions in their social, personal or emotional contexts. Thus, comment analysis enables scholars to investigate how individuals comprehend and utilize psychological ideas when they participate in online everyday conversation. This is also evident in the popularity of attachment-related videos on YouTube, with hashtags such as #attachmentstyles garnering more than 58,000 videos (as accessed in July 2026) on the platform.

YouTube does not discuss psychological concepts in one format. Though these formats can provide similar information regarding attachment styles, they can produce different patterns of user responses. Users can be influenced by different narrative frameworks.

Past studies have investigated the effects of various video formats on users' reactions to mental health content. As an illustration, Zheng and Zhang [14] compared the format of storytelling and lecturing on Tik Tok and showed that presentation styles may influence user engagement. Their study however mainly concentrated on the engagement metrics as opposed to the content and meaning of the responses by the users.

There are other studies on the spread of psychological ideas on social media. As an example, Basch et al. [15] studied the content about ADHD on Tik Tok and showed that psychological concepts have been more actively introduced into the popular online discourse outside of professional settings. Nevertheless, current literature has given little consideration to how users make sense and use these concepts to make sense of their experiences.

Emotional connection and interpersonal experiences have also been emphasized in research on mental health communication on YouTube. Ferchaud et al. [16] demonstrated that parasocial engagement with mental health YouTubers can shape the way viewers consume psychological content based on the emotional expressions and communication styles of creators. However, this study did not investigate whether there are different patterns of interpretation for different narrative forms of psychological content.

Moreover, studies on online psychological content have indicated that online media can shape people's feelings and self-reflections [17]. But there has been less focus on the role of different narrative structures in shaping users' meaning-making processes, such as their understanding and identification with identity-related psychological constructs such as attachment styles.

To fill this gap, analyzing comments at scale offers a way to explore audience interpretations of psychological concepts following the viewing of different types of narratives. But the complexity of online discussions makes it hard to identify systems through qualitative analyzation. Topic modeling and emotion analysis can give an overview of responses. So, this research explores the impact of narrative structures on users' reactions to attachment style videos on YouTube.

Topic modeling can be used to determine various themes in the discussion of users and what they are talking about regarding attachment theory and how they relate these ideas to their own experiences. In the meantime, emotion analysis will record the affective reactions of users, which will prove how various narrative structures can affect emotional involvement. This study will add to a better comprehension of how psychological concepts are processed and redefined online by

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studying the reaction of people to various narratives framework concerning attachment style. Moreover, the results can give some clues on the successful communication strategies to share psychological information via social media.

2. Method

2.1. Data source

In order to explore the effects of various narrative structures on audience reactions to content about attachment styles, user comments were gathered in the corresponding YouTube videos. The choice of YouTube as the main source of data was made due to the fact that, as the second-largest search engine in the world, it has become one of the best platforms where content creators can post various video content and communicate with people around the globe [18]. When searching a platform using the tag attachment style, there were about 58, 000 videos (as of July 2026).

Three typical types of videos were chosen based on an exploratory analysis of these digital materials: Self-statement, Lecture, and Cartoon. Three videos were sampled in each narrative category (9 videos total) to guarantee the robustness of the data. An aggregate dataset of 14,104 user comments was downloaded on these videos to be further analyzed computationally as text. Table 1 gives a detailed summary of the chosen video titles, direct URLs, narrative categories, and number of comments they have received..

2.2. Variables operationalization and data extraction

The independent variable is operationalized as the narrative modality of the video content, which can be categorized into three different structural frameworks. Interestingly, all the sampled videos have a common denominator, as they discuss the very definition of attachment styles and explain how such psychological patterns affect real-life interpersonal relationships:

Self-statement: Involves a single creator addressing the camera, defining attachment styles and providing knowledge about attachment style.

Lecture: All the three videos that use the lecture format are TED Talks. According to Sugimoto and Thelwall (2013), TED is successful in repackaging complex domain knowledge into entertaining and inspirational video content ("Edutainment"), which creates a high level of credibility among the general population and provides algorithmic recommendation benefits on video sharing sites. As a result, viewers will be more willing to watch videos with the TED label, which tend to attract more comments that can be used by researchers to collect data. Active audiences who want formal knowledge within this tag give structured feedback.

Cartoon: Uses animated visual metaphors to anthropomorphize abstract psychological constructs. As an example, anxious attachment is illustrated as a shaking figure that holds on to a partner, whereas avoidant attachment is illustrated as a masked person who withdraws over and over again.

The complicated mechanisms of ego defense are reduced to the simple physical metaphors (e. g., the childhood trauma can be framed as a stone in the backpack of a character).

The operationalization of the dependent variable is the multidimensional audience responses that are present in user comments. In order to retrieve these digital trace data, all the chosen video URLs were uploaded into the RStudio environment, and the user comments were obtained with the help of the official YouTube API through the R package vosonSML. The obtained data were formatted into a CSV file of comment IDs, raw text, timestamps, and video IDs.

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Lastly, these audience reactions are quantified in two quantitative text dimensions: (1) thematic topics derived through MDCOR modeling and (2) emotional profiles and sentiment network structures mapped using SENA analysis.

Table 1. List of selected videos

video name	video link	Total comments	category
The 4 Main Attachment Styles in Relationships (+ The Attachment Theory)	https://www.youtube.com/watch?v=pL1NBH7LrXk	296	personal statement
Attachment Styles and Personality Disorders | What is Attachment Theory?	https://www.youtube.com/watch?v=Ybs0TRoiByE	389	personal statement
The 4 Attachment Styles Explained | What's Yours?	https://www.youtube.com/watch?v=HdEPDW5Vcpg	470	personal statement
How attachment influences self-image | Judy Ho | TEDxReno	https://www.youtube.com/watch?v=ibM6ANA5c4Q	426	lecture
Put on Your Attachment Hat & Change your Romantic Attachment Style | Ashley Harvey | TEDxCSU	https://www.youtube.com/watch?v=jHpdf4ekrXM	94	lecture
Attachment theory is the science of love | Anne Power | TEDxWaldegrave Road	https://www.youtube.com/watch?v=9idayJyWCWs	625	lecture
How Your Attachment Styles Affect Your Relationships	https://www.youtube.com/watch?v=fyV0NksMbiE	847	cartoon
Attachment Theory Explained - Attached Animated Book Summary	https://www.youtube.com/watch?v=tRNpGsvzOlw	204	cartoon
The Attachment Theory: How Childhood Affects Life	https://www.youtube.com/watch?v=WjOowWxOXCg&t=8s	10753	cartoon

2.3. Text pre-processing

Machine-Driven Classification of Open-Ended Responses (MDCOR) is a computer-assisted model that integrates topic modeling, text classification, and qualitative interpretation by researchers. In order to make the data relevant, an initial corpus of 14,104 comments was analyzed. As child comments were mostly referring to previous parent comments, but not the content of the video itself, they were filtered out. As a result, a refined set of 10,894 top-level comments was kept to be processed and modeled on topics.

The first text mining capabilities of MDCOR assisted the research team to preprocess the comments in order to reduce superficial linguistic differences and create a structured matrix of the corpus vocabulary prior to classification. Common or non-informative words were systematically analyzed and filtered out where necessary. Instead, responses that lacked enough usable content were explicitly marked so that the research team could examine the omitted cases and assess any possible influence on the overall results.

Moreover, initial text mining showed that the domain-specific word "attachment" was overrepresented. As all of the sampled videos clearly explain the attachment theory, almost all of the comments included this word; therefore, it acted as background noise and did not have a specific diagnostic significance in terms of audience attitudes. Therefore, the term "attachment" was cut off before the evaluation of the diagnostic metrics and ultimate MDCOR classification.

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2.4. Topic modeling and classification

The analysis was done in a mixed-methods approach, in which the computational classification was supplemented with human interpretation. In particular, MDCOR was used to identify latent topic patterns in the corpus without the need to specify an a priori coding scheme. To select the best number of topics, several topic solutions were compared based on both statistical diagnostic measures of MDCOR and qualitative measures of topic distinctiveness and semantic coherence.

After choosing the final model, MDCOR ranked the comment dataset according to the topic probability distribution of each response and provided top-associated keywords and highly representative comments of each machine-generated code.

The machine produced a total of 81 representative comments which were categorized into four themes; V1, V2, V3 and V4. The researchers examined these 81 representative text responses and gave them certain descriptive labels to substitute each theme. Therefore, V1 was summarized as Childhood and personal experience disclosure , V2 as Attachment-based self-interpretation , V3 as Social reflection through psychological concepts and V4 as Emotional reactions and stance expression. This interpretive review was important because the algorithmic topic modeling identifies textual similarity but does not necessarily reveal its larger social or substantive meaning. When one topic included several issues with nuances, such differences were outlined in analytic notes so that the responses would not be narrowed down to an overly restrictive interpretation.

2.5. Narrative group comparison

A chi-square test of independence was conducted after classification to investigate the question of whether there were significant differences in topic distributions among the three video narrative frameworks (Personal Statement, Lecture, and Cartoon). A contingency table was created by cross-tabulating the frequency of comments per topic with the corresponding narrative framework. At an alpha level of .05, standardized residuals and mosaic plots were used to identify which combinations of framework-topics contributed to the overall structural differences.

2.6. Sentiment and emotion analysis

Sentiment and Emotion Network Analysis (SENA) is a platform that calculates interactive word frequency distributions, sentiment and emotion distributions by and across documents using natural language processing. The analytical framework allows researchers to detect emotional nuances in seventeen languages, assess content inconsistency on an individual and group level, and statistically test the hypothesis of whether emotional prevalence is equal across groups of participants [19]. In contrast to traditional methods that only consider aggregate sentiment measures, SENA integrates individual and collective speech inconsistency measures into its assessment process [19].

SENA was the analytical engine behind this study by providing sentiment classifications, emotion indicators and comparative network visualizations. These analysis products enabled us to identify whether different narrative structures around content related to attachment theory provoked different emotional reactions and to assess the impact of these storytelling strategies on user responses.

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3. Results demonstration

3.1. Identify and description of topics

The results section will show the following process: First, based on the metrics selected by the model to choose the right number of possible topics. Second, referring to the graph that was created based on MDCOR to identify the interconnection of potential topics. Third, applying the human quality research methodology with the help of AI to analyze the top 20 representative comments and frequency-based salient words can show the theme of each topic. This process is closely related to the analysis of context and a statistical model, as well as establishing the basis of the study in the connection between sentiment and the impact of various narrative frameworks in a subsequent section.

3.1.1. Select appropriate number of topics

Four metrics were used to determine the appropriate number of topics ranging from 2~60. Noticed, these metrics analyze only parent comments, as mentioned in the methodology. As the number of topics increase, metrics also varied, which is shown in figure 1. As the number of topic increase, the results graph (distribution of topics) become more significant at first, but topics become less difference than others if the number continuously increases endlessly, making analysis to theme of topics become less valuable and more challenging. When the number of topics reaches four, the Deveaud2014 metric reaches almost 1.0, and the CaoJuan2009 metric is below 0.25. Although the similarity over the same position of both matric, selecting 8 or 14 as the number of topics will result in topics being too close together in the graph in the appendix, making distinction between topics become too small. Therefore, figure 1 shows that the number of topics should be 4, to highlight differences between topics when doing analysis.

Each topic is named as V1, V2, V3, and V4 in the following section's analysis.

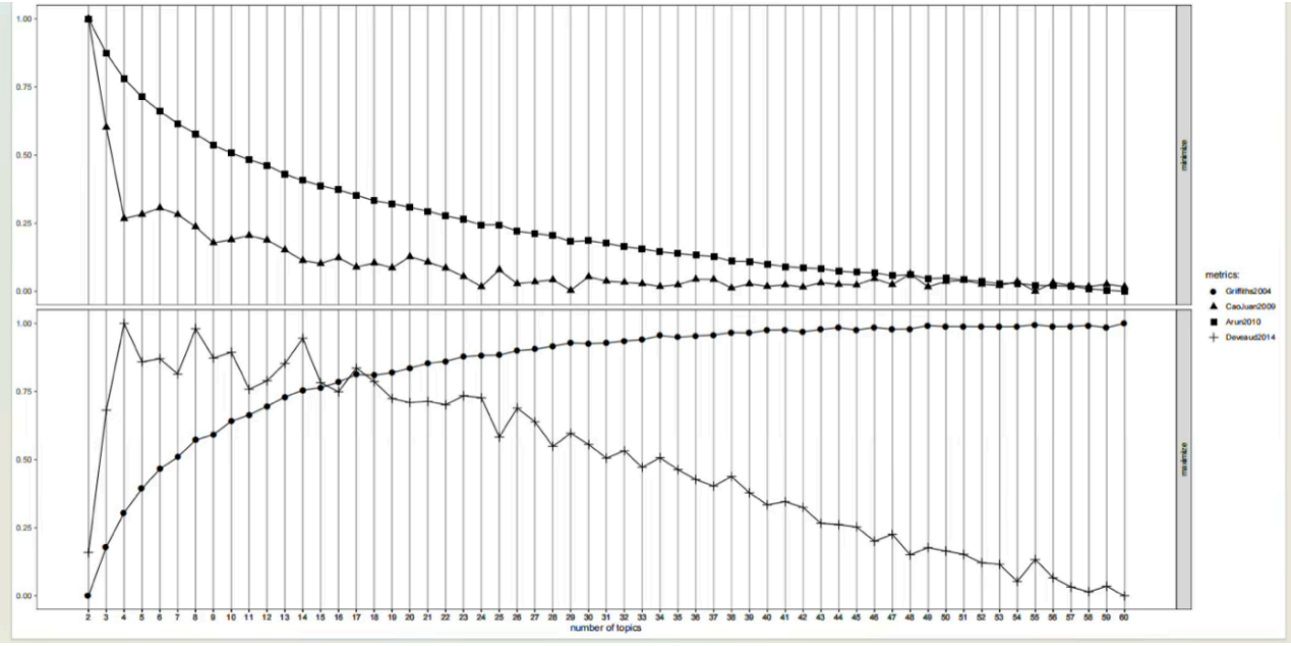


Figure 1. MDCOR assessment metrics showing the convergence of two metrics

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3.1.2. Inter-topic distance and terms frequency

In Figure 2, a graph that visually shows the relationship between each topic (use 4 as the number of topics), circles are used to represent topics, and the distance between each circle represents the similarity between each topic in linguistic features. These 4 topics is 4 distinctive topics in attachment style discussion; as shown in Figure 2, these four circles didn't intersect with each other.

Figure 2 also demonstrates the proportion of each topic in the discussion of attachment style, while a larger area of a circle represents a larger proportion, the proportion of each topic was broadly consistency across the discussion(v1=26.9%,v2=26%,v3=25.2%,v4=21.8%). The relative consistency of the proportion indicates that users' comments are thematically diverse. Therefore, the necessity of examining whether these three video narrative frameworks' influence over users' engagement is statistically significant is supported by the graph, and presented in the following section.

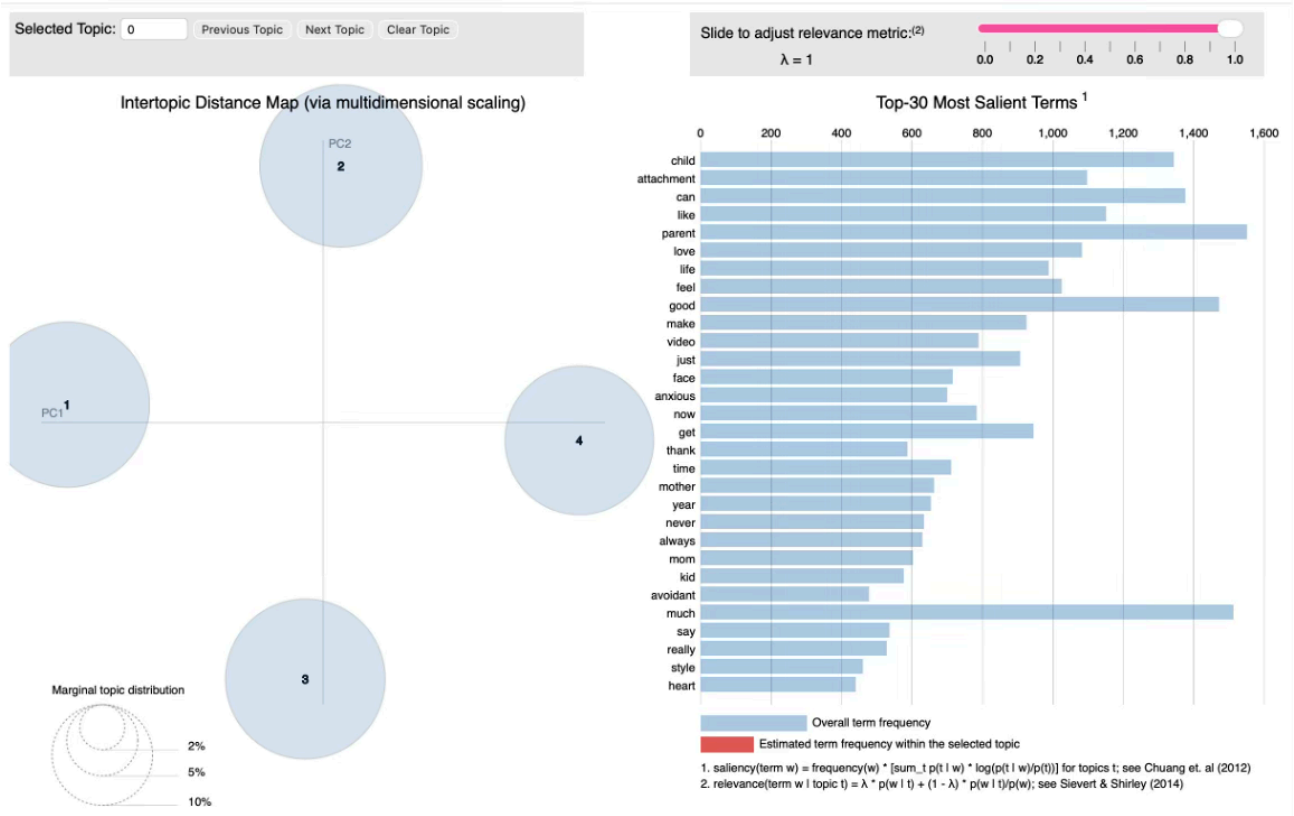


Figure 2. Intertopic distance map and the 4 topic disperson and proportion

Topic modeling identified four primary discussion patterns. (Figure 3) Topic 1 is characterized by vocabulary related to family and childhood—including "mother," "father," "family," and "child"—and is interpreted as the disclosure of childhood and personal experiences (V1). Topic 2 comprises vocabulary related to emotions and interpersonal relationships, such as "love," "feelings," "relationships," and "trust," representing attachment-based self-interpretation (V2). Topic 3 reflected broader discussions of childhood, parenting, and life experiences, with terms including "child," "parent," and "experience," and was categorized as Social Reflection through Psychological Concepts (V3). Topic 4 mainly consisted of attachment-related concepts, including "attachment,"

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"anxious," "avoidant," and "style," together with evaluative emotional expressions, and was interpreted as Emotional Reactions and Stance Expression (V4).

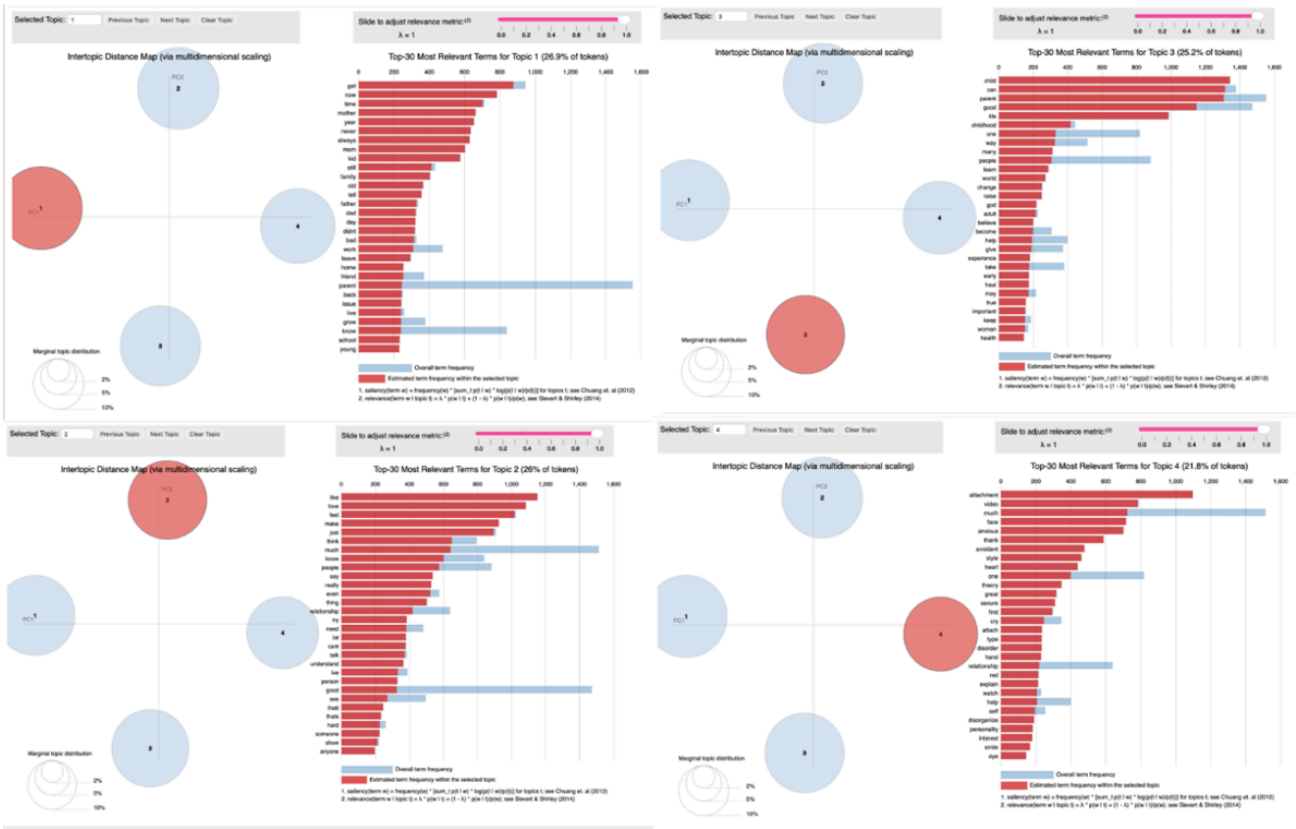


Figure 3. The graph of a standardized residuals from chi-square of independence for topic distribution and narrative framework

3.1.3. Human-in-the-loop topic analysis

The previous section provides statistical distinctions between each topic. However, the theme of each topic is still unidentified and doesn't have any realistic meaning. Therefore, in this section, these four topics(v1,v2, v3, and v4) were analyzed by a Human-in-the-Loop procedure to determine the theme of each topics. To preserve the original meaning of comments while improving the accuracy of interpretation, this procedure is divided into 4 steps. First, MDCOR was used to select the 20 most representative comments for each topic. Second, AI were applied to analyze the 20 most representative comments selected by MDCOR and generate interpretations of the four topics' themes. Third, the research team manually reviewed the 80(20x4) most representative comments by marking out keywords/sentences and generating their own understanding of the themes of these topics. Finally, the research team will check with AI generate conclusion to modify it if there are any inaccurate, blurry, or general descriptions in the generation. Therefore, highly frequent keywords or phrases are understood under the context provided by the most representative comments, and this interpretation determines the theme of each topic. Table 2 collects the linguistic evidence to determine the theme of these four topics.

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Table 2. Topic theme demonstration, most silent words(by frequency) and the most representative comments

Topic & theme identified by research team	The most representative comments: Verbatim excerpt for preserve the original meaning and emotion of commend	MDCOR's generated silent words by frequency(30 words each topic)
V1: childhood and personal experience disclosure	"My mother grew up as the oldest of 3... I found out that as a newborn infant, my mother did not like touching me or holding me... I have not spoken to or seen my mother for 25 years... Now I am trying to work out what attachment issue I have and how I can help myself parent my now 11 year old daughter. I made a promise the day I found out my daughter was going to make it that I would be the mother I never had."	get, now, time, mother, year, never, always, mom, kid, still, family, old, tell, father, dad, day, didn't, bad, work, leave, home, friend, parent, back, issue, live, grow, know, school, young
v2: Attachment Based self interpretation	"I'm actually a male in the anxious attachment archetype... This archetype is the loneliest... The problem I feel isn't covered here is the anxiety and/or abuses anxiousness stems from the feeling of an approaching unknown... I believe this archetype usually falls in the category of sensitive people rather than women... Letting any man or woman lose self-worth because of your actions can lead to depression and anxiety in their future... Being the overly attached man in this archetype, you don't have much self-esteem/confidence... Anxiety does NOT push you toward relationships fast after being hurt. It makes you hang onto them super hard..."	like, love, feel, make, just, think, much, know, people, say, really, even, thing, relationship, try, need, lot, cant, talk, understand, live, person, good, see, trust, that's, hard, someone, show, anyone
v3: social reflection through psychological concepts	"you have a society that turns its back on its people, you get a lot of mental health break downs... and if on top of that society capitalist sink or swim decrees that mental health and physical health are an arbitrary part of your luck in life, well then you have a huge segment of society under massive daily stress that raises their children in these scenarios... and on top of that you insist we all carry guns, social conservatism is a disease."	child, can, parent, good, life, childhood, one, way, many, time, people, love, feel, trauma, thing, family, need, learn, understand, grow, experience, help, support, healthy, important, emotional, care, relationship, heal, mental
V4: emotional reactions and stance expression	"What a whole bunch of BS To think that people get actually paid years on end to write this kind of baloney face with tears of joy face with tears of joy face with tears of joy face with tears of joy face with tears of joy face with tears of joyx18...	attachment, video, much, face, anxious, thank, avoidant, style, heart, one, theory, great, secure, find, cry, attach, type, disorder, hand, relationship, red, explain, watch, help, self, disorganize, personality, interest, smile, eye (It should be noted that for V4, the only topic have large amount of emoji usage, its term frequency lists might represent the use of emoji, instead of natural language usage, such as ❤ is converted to "heart")

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3.1.4. Topic interpretation

Table 3. Topic theme identification

V1: Childhood and personal experience disclosure	Comments in this topic primarily focus on how users recollect their early upbringing experience, especially on how parents or caregivers treat them, and how this connect with their later development	V3: Social reflection through psychological concepts	Users in this topic mainly expand their discussion out of personal experience. They mainly focus on boarder society, culture or systematic question, applying psychology concept to perspective of social critics
V2: Attachment-based self-interpretation	In this topic, users mainly focus on how to use "attachment theory" to explain their own relationships , often identifying themself as a specific type of attachment and connecting to their own life	V4: Emotional reactions and stance expression	In this topic, users will directly show their emotional and stance toward videos. Range from appreciation, gratitude to disagreement and judgement , and largely use emojis in their comments.

3.2. Assessing different narrative framework in topics distribution

In this section, a chi-square test of independence was conducted to determine whether narrative framework is associated with topics' distribution. The three narrative frameworks (animation, talk, and personal-statement) is grouping variable, and the four topics (v1,v2, v3, and v4) is the response variable.

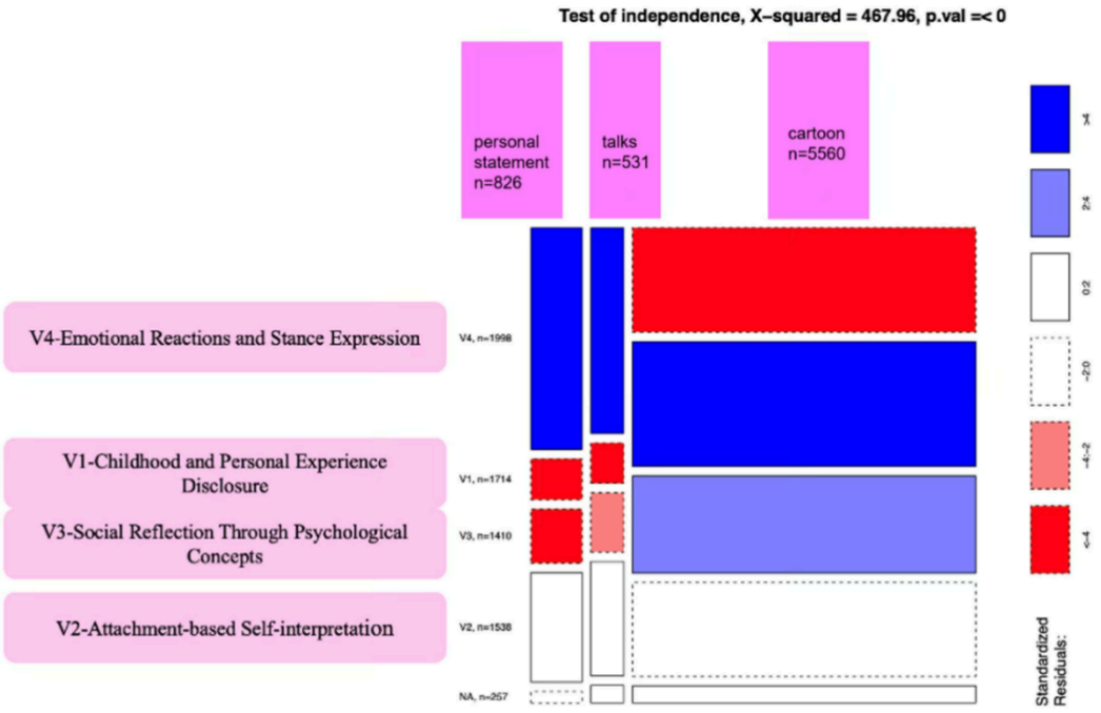


Figure 4. Chi-square test of independence demonstration between groups(v1,v2,v3,v4) and narrative framework

The chi-square of independence provides a statistically significant evidence that plausibly there is an association with the 3 narrative framework and the distribution of the four topics, as df = 2 x 3 =

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6, $\chi^2 = 467.96$ and $p \leq 0.01$. Figure 3 shows the standardized residuals of 3 different narrative frameworks with the four topics and their themes identified by the research team.

In Figure 4, blue cells indicate that, assuming the three narrative framework is independent with the four topics, this cell appears larger than expected. The red cells show that this cell appearance is less than hypothesized with the same hypothesis as the blue cells. Since the blue cell is darker, it is bigger than anticipated, and the darker red cell is smaller than anticipated. This distribution is represented by the Hollow area and shaded area which is regarded as statistically limited to be evidence since its residuals is too small.

Figure 5 shows the distribution of sentiments in the four themes. In general, positive sentiment is more dominant in all four themes, whereas negative sentiment is less represented. The percentage of positive sentiment is between about 0.56 and 0.63 and that of negative sentiment is between about 0.37 and 0.42. This means that, although the discussions often include difficult emotional experiences regarding attachment, the overall emotional orientation of users is quite positive.

The most common positive emotion in all topics is trust, which is then followed by anticipation and joy. Fear is the most significant negative emotion that takes up the biggest percentage of all topics as compared to sadness and anger. Emotional composition varies between topics: V4 topic has the highest percentage of trust, and V2 topic has comparatively higher percentages of fear and sadness. These trends show that users are conscious of negative feelings in the discussions.

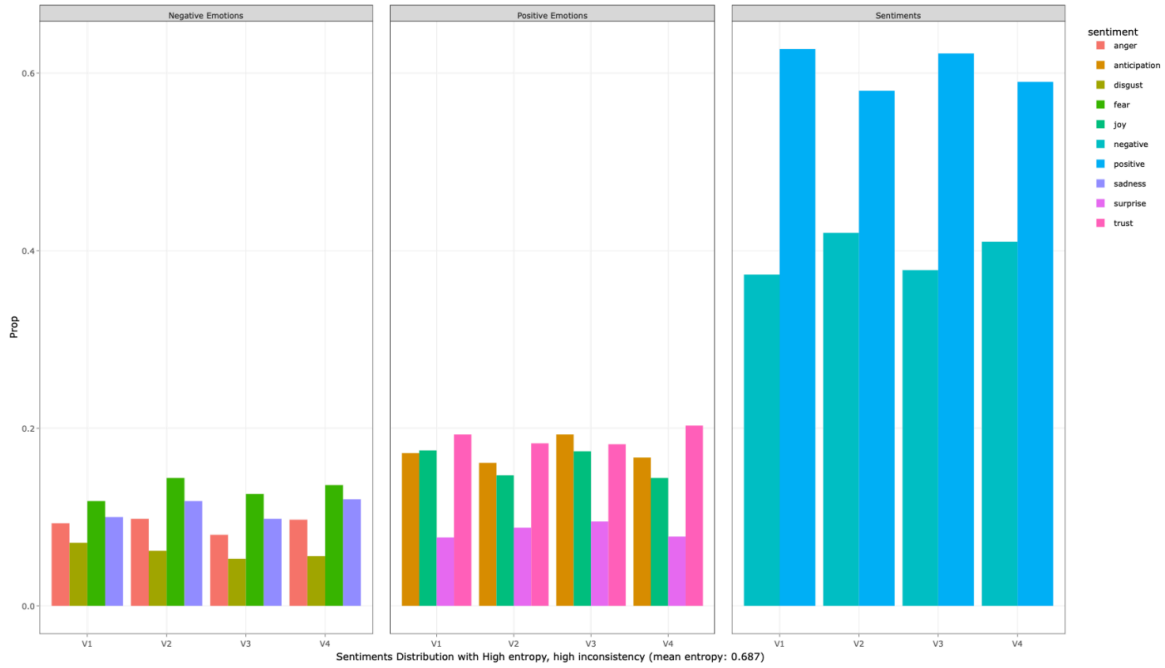


Figure 5. Distribution of emotional responses

4. Discussion

The results indicate that psychological concepts are construed according to their informational content and the narrative frameworks. Various frameworks can lead audiences to various types of meaning-making, such as emotional involvement, autobiographical thinking, self-understanding, and social discourse.

In particular, the finding indicates that there is a stronger association between cartoon narrative and V1(Childhood and Personal Experience Disclosure). The reason could be that the cartoon

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narratives offer a more familiar and accessible depiction that can help to establish links between psychological concepts and personal childhood and family experiences. In addition, both personal statement and talk narratives are more associated with V4(Emotional Reactions and Stance Expression). This trend indicates that first-person stories or human explanation can prompt audiences to react emotionally and engage with the speaker, instead of merely talking about the psychological ideas. Conversely, V2(Attachment-based Self-interpretation) and V3 (Social Reflection through Psychological Concepts) do not have significant format-specific differences. This implies that analytical interpretation and social reflection emerged across formats, which implies that attachment concepts themselves offer a common framework of self-understanding and reflection.

These results build on earlier studies of mental health communication, showing that modes of presentation matter not only for engagement but also the ways users make meaning about psychological concepts.

The general positive emotional trends indicate that the psychological content on social media does not only provoke emotional responses. Yet it is a realm of self-knowledge and inter-human reflection. In approaching psychological concepts, users would respond primarily in a positive manner such as seeking to understand, validating experiences, reflecting on relationships or contemplating personal development. This shows that psychological ideas, particularly attachment-based can serve as an interpretive scheme by which users arrange and explain their own experiences, instead of merely being exposed to psychological information.

This result confirms previous debates about concept creep and psychological labeling, which suggest that attachment styles have gone beyond the initial scholarly framework to be used as a means of interpreting daily life. Instead of passively receiving psychological information, individuals actively use labels related to attachments to structure memories, find patterns in interpersonal relations, and create personal identities.

The comparison analysis (Figure 6) is also a series of interrelated steps in meaning-making, which could imply that the process of mean-making is dynamic. As an illustration, a user can initially feel emotional resonance with a story, then remember personal experiences in childhood or relationships, use the concepts of attachment to explain their own behaviors, and then generalize these thoughts to wider social conversations. Though various narrative frameworks might focus on various phases of this process, the close connections between the four themes suggest that such types of engagement frequently co-occur in online psychological conversations. These results have practical implications on online communication of psychology as well.

Various narrative models can be used to fulfill different communicative functions: visual narratives may facilitate personal reflection, as abstract concepts are made more accessible, whereas first-person or expert narratives may be more emotionally engaging and interpersonal.

Regardless of these contributions, there are a number of limitations to this study. First, the analysis was done only on YouTube, which can be indicative of certain demographic and algorithmic biases.

Second, the sample is imbalanced in the video modalities. In particular, one animation video (The Attachment Theory: How Childhood Affects Life) has received more than 10,000 comments, which constitute the overwhelming majority of the cartoon category, Therefore, the statistical relationships between cartoon narratives and certain response themes (e. g., V4 emotional reactions and V3 social reflections) can be disproportionately influenced by the viral nature and content of this single video, instead of being representative of all animated psychological media. In addition, since this specific

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video explicitly puts the concept of attachment in the context of childhood experiences, content-level narrative themes can be confounding to the impact of the visual format itself.

Future studies should extend this approach to other social media, adopt a more balanced video sampling design across categories or incorporate longitudinal designs to determine the long-term effects of digital narrative exposure on people's self-perception.

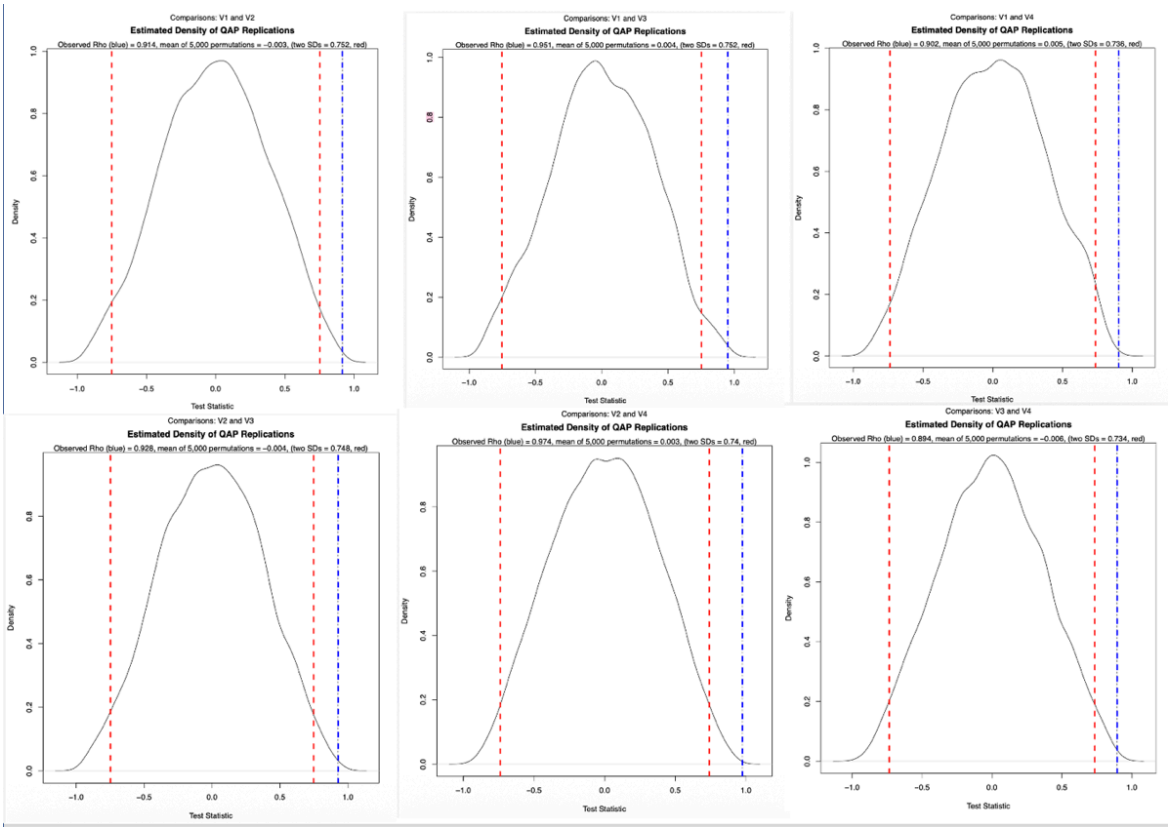


Figure 6. Comparison analysis of each two topics

5. Conclusion

This paper examined the effect of different video narrative structures on social interaction and affective response to attachment theory on YouTube. Through a detailed examination of a polished sample of 10,894 top-level comments, four main themes of user reactions were able to be determined: Childhood and personal experience disclosure (V1), Attachment-based self-interpretation (V2), Social reflection through psychological concepts (V3), and Emotional reactions and stance expression (V4). The results show that storytelling modalities are systematically related to audience engagement, as various frameworks (Personal Statement, Lecture, and Cartoon) elicit different levels of personal narrative sharing, theoretical thinking, and emotional arousal.

The empirical evidence shows that video narrative structures are systematically involved in audience meaning-making about psychological constructs. Instead of passively consuming information, online users actively use attachment concepts as an interpretive schema to retrieve autobiographical memories, make sense of childhood experiences and construct their identities - a process which demonstrates the active nature of audience meaning-making online [20, 21]. This active internalization is important because it demonstrates how mediated psychological terms move

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from the realm of academia into everyday cognitive frameworks for understanding oneself and others [7].

This study, methodologically, demonstrates the power of combining machine-based topic modeling (MDCOR), Sentiment and Emotion Network Analysis (SENA), and human-AI collaboration in performing qualitative analysis to effectively draw insights out of complex digital trace data in the present information-rich digital world.

Theoretically, it provides empirical understanding of health and psychological communication and how the media framing can change the way audiences process and internalize psychological constructs on the Internet. In practice, these results offer practical suggestions to digital creators about what narrative structures they should follow in order to successfully involve audiences in mental health literacy and psychological education.

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