

COGNITIVE ARCHITECTURES OF RITUAL LAMENTATION: ANALYZING ZORILE SONGS USING IMAGE SCHEMAS

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Abstract

The current study analyzes the process by which individuals psychologically, socially, and culturally process the phenomenon of death through the analysis of the ritualistic “Songs of Dawn” (Zorile). In this research, the focus was on Image Schemas, cognitive and social processing, and the interactions of elements from Terror Management Theory (mortality salience, self-esteem, and cultural worldviews). The research encompassed four variants of the “Outdoor Dawn Songs” (Zorile de afară) present in the work *Cântecul zorilor și bradului* (Kahane & Georgescu-Stănculeanu, 1988), collected between 1934 and 1950, utilizing a Corpus Linguistics methodology in RStudio. In the analysis, the schemas CONTAINMENT, PATH, FORCE, VERTICALITY, BALANCE, and CENTER-PERIPHERY were identified and quantified, as were the dimensions of TMT and social relations. The results revealed a predominance of the CONTAINMENT schema ($M = 5.75$, $SD = 2.22$), denoting a constant preoccupation with the existential space of the deceased. The analysis of social relations revealed the dominance of the Family category (52.94%) compared to the Spiritual dimension (17.65%). A non-uniform distribution of the schemas was also observed ($\chi^2 = 36.2$, $p < .001$), as well as a decrease in scores after 1939, possibly influenced by the socio-historical context of the onset of World War II. Cognitive processes highlighted the predominance of causality (35.14%), thus indicating a focus on understanding and rationalizing death within the traditional community. The present study contributes to understanding how traditional communities process and integrate the experience of death through ritualistic practices, emphasizing the importance of the cognitive and social dimensions in managing grief through the development of a collective imaginary.

Cuvinte-cheie: Scheme imagistice, Teoria Managementului Terorii, Cântece ritual, Procesarea morții, Imaginar colectiv

Keywords: Image Schemas, Terror Management Theory, Ritual Songs, Death Processing, Collective Imaginary

1. INTRODUCTION

In attempting to understand how the inhabitants of a geographic area or historical period understood and psychologically and socially processed significant moments in their personal lives or the life of their community, we discover that cultural products constitute one of the few available sources of information about these civilizations. When seeking in literature an answer to the question: “What are the major moments in an individual's life?”, these are often identified, in the

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following order: birth, betrothal, and death (Gennep, 2019). While these moments are typically presented as fundamental to human existence, others may be added depending on individual economic and social characteristics, or specific circumstances. Acknowledging these milestones in the lives of both individuals and communities, it becomes apparent that the event of death, or the funeral ritual, belongs to an entirely different register. Death and life are often considered equal, or as equivalent dimensions, precisely because of the dual character of the end of life in popular consciousness and belief – a finality and a transition to another form of existence.

For the purpose of this study, the work *Cântecul zorilor si bradul* (Kahane & Georgescu-Stănculeanu, 1988) was reviewed. In this manual, *bocete* (laments), or *cântecele zorilor* (songs of dawn), are presented as the most archaic and rudimentary folklore structures of popular song, which are still preserved and practiced today. These ritualistic songs possess a unique character in Europe and are capable of encompassing the most important folklore genres. In their thematic analysis, the authors emphasized that *Zorile* (Dawn) does not precisely signify a moment of the day, but through a semantic shift, the word *Zori* is equivalent to the word *Zâne* (Fairies) (Lorinț & Kahane, 1968). Analyzing this observation, and having studied the texts of the *bocete* (laments), one can observe the presence of a series of cognitions attributed to supernatural or magical beliefs that are characteristic of the funerary process of individuals.

The “Songs of Dawn” frequently referred to as *bocete*, are representative creations for the period of the deceased's final day of wake, prior to burial. The “Outdoor Dawn Song” (*Zorile de afară*) is the most well-known form of these songs and is often sung by women in the courtyard of the deceased's family home. The song is addressed to the *Zori* fairies, asking them to travel to the personified Sun and implore it to delay its sunrise, as the soul of the deceased is not yet prepared for departure and still has several tasks to complete (Poruciuc, 2011). Elements characteristic of the pre-Christian period found in the texts include the personification of the Sun and the Dawns, but especially the presence of the evil fairy, the death figure, *Sima Samodiva* (Konach, 2014). In other variants, the emergence and subsequent presence of religious phenomena in the form of Christianity brought modifications to the texts, with Jesus Christ appearing as a character. This transition can also be observed in the evolution of beliefs. In pre-modern cultures, in the collective consciousness, death appeared as a phenomenon provoked by deities to avenge themselves on humans for their petty deeds, but with the passage of time and the evolution of societies, these sets of cognitions took the form of the belief that God is manifesting His will (Oesterdiekhoff, 2016).

The recognition of death is a central element in these folklore products. This recognition typically involves emotional reactivity and cognitive modifications such as avoidance and rigidification of processes, as well as increased uncertainty, according to the mortality salience component created within Terror Management Theory (Vahle & Tomasik, 2022). To cope with the anxiety generated by the awareness of death or confrontation with it, people have developed beliefs in symbolic immortality, referring to the values created by the deceased and left to the community, and literal immortality, referring to the continuation of life after physical death (Dechesne *et al.*, 2003). Manifestations of both can be observed in the texts of the *Zorile*. Other psychological dimensions that interact with the phenomena generated by the recognition of death are self-esteem and worldview, both of which explain the process of evaluating oneself, or, in the

case of the Zorile songs, the deceased, and his fulfillment of the standards of the internalized community vision of life and the world, as well as his merit in having a spiritual afterlife (Lifshin *et al.*, 2021). Because the morphology and syntax of the laments contain many motor elements or suggestions of spiritual and social mobility, and of the family system, they can be framed or delimited as condensed representations of perceptual experiences (Oakley, 2010). These distillates are called Image Schemas, defined as preconceptual structures that arise from our bodily interaction with the environment, being outlines of sensorimotor experiences. They also represent continuous and analogous patterns, having at the same time a strongly sedimented but also flexible internal structure (Hampe & Grady, 2005). The initial schemes developed by Johnson (1987) and Lakoff (1990) are: CONTAINMENT/CONTAINER, which represents critical elements in structuring human perception, denoting the character of objects or persons to contain or to be contained, in the case of the analyzed texts, evoking the character of the dead person to belong or not to a world; PATH/SOURCE-PATH-GOAL, which suggests the orientation of objects or persons in motion, from an initial point A to a final point B, and making it possible to observe cognitions about the passage into other spiritual worlds; the LINK schema makes possible the perception of similarities and connectivity in understanding the world through logical entities (predicates or propositions), which can be connected by logical relations such as: “and”, “but”, “or”, “if-then”. PART-WHOLE compresses the delimitation of a space from a whole; more precisely, it is a composite schema, formed of different parts, and the creation of links between them generates a connotative meaning (Sáenz, 2002). CENTER-PERIPHERY expresses the “experiential space” created around a central point, as we can observe in the texts, an example of such a point being that of leaving the earth, or social points, according to which relationships are built and distances are defined from the external world of man. BALANCE summarizes force vectors or “weights” and equilibrium points or axes, suggesting the constant balance in which the elements of life are found or may represent, in this case, the idea of judging the value of life.

Focusing primarily on the detection of Image Schemas, and subsequently on the evolutionary and anthropological elements of TMT (Terror Management Theory), as well as the social dimension, a need emerges to refine the analyses in order to observe specifically the dimension of cognitions expressed in the *Zorile de afară* (Outdoor Dawn Songs), and, more comprehensively, the ethnological phenomenon of the *bocet* (lament) as a historical entity preserving beliefs of the collective imagination.

2. METHOD

The major objectives of the present study are to analyze the psychological, social, and cultural processes involved in the grieving in archaic communities; to identify and quantify Image Schemas in order to understand the structures involved in the conceptualization of death; and to investigate the phenomenon of existential anxiety. A further objective is to observe social connections and cognitive processes within the experience of death, as well as their modification in traumatic socio-historical contexts (World-War II).

2.2. Data collection

The data is represented by the *Zorile de afară* songs for which 4 variants were chosen. In choosing the variants, care was taken that they do not repeat in a

very large quantity because many versions were identical or similar, that they be of significant dimensions, and that they not all be from the same village or locality. The texts in their primary written form followed the linguistic norms of the 20th century or their writing was phonetic. In constituting the database, these were written following current orthographic and orthoepic norms to make their analysis possible.

Because the songs have a high degree of similarity, the following were chosen:

Song number 46 from Rasovița village, Gorj county on 30.9.1934

Ro: Zorilor, zorilor, să nu zoriți, Să mi-l pribegiți, Pe cel de-a pribegit, Cu numele Ion, Ce are să treacă, în țara cu dor, în cea fără dor, din țara cu milă, în cea fără milă....;

Eng: Zorilor, zorilor, do not hasten, Do not make him wander, The one who has wandered, With the name Ion, Who has to pass, to the land of longing, to the one without longing, from the land with mercy, to the one without mercy...;

Song number 165 from Seliștea village, Mehedinți. Păuna Popescu on 25.8.1950

Ro: Coccoșei negri cântară. Zorile se revărsară. Zorilor, surorilor, nu pripiti a zori. Soare, soare frățioare, ia ceața pământului și pulberea drumului!...;

Eng: Black roosters sang. The Zori poured forth. Zori, sisters, do not rush to dawn. Sun, sun little brother, take the mist of the earth and the dust of the road!...;

Song 168 from Peștișani village, Gorj on 5.5.1935

Ro: Stai soare, nu răsării, până și-o găsi, să-și găsească un logofăt, logofătul să scrie, carte neagră slove verzi, să trimită în toate părțile, pe la străini, pe la vecini, pe la frați pe la surori, la dragii de verișori, că el este călător, dintr-o lume într-altă lume...

Eng: Stay sun, don't rise, until he finds, let him find a clerk, the clerk/ chancellor to write, black paper green letters, to send in all directions, to strangers, to neighbors, to brothers to sisters, to dear cousins, that he is a traveler, from one world to another world...

Song 171 from Pocruia village – Gorj on 22.9.1938:

Ro: Zorilor surorilor, nu pripeti a zori până s-o găti! Voi, voi, voi nevestelor, nu vă rugați de noi, vă rugați de Sfântul soare, nu pripească a răsări, până s-o găti, s-o despărți, iar de mamă și de tată, și de frați și de surori încă și de verișori...

Eng: Zori sisters, don't rush to dawn until he's ready! You, you, you wives, don't pray to us, pray to the Holy sun, not to rush to rise, until he's ready, he'll part, from mother and father, and from brothers and sisters and even from cousins...

Songs extracted from the work “Cântecul zorilor și bradului” (Kahane & Georgescu-Stănculeanu, 1988)

2.3. Analysis

To facilitate a rigorous and replicable analysis of the linguistic data, each of the four song corpora was imported into the R environment in its updated form. The coding process was carried out by three external collaborators with expertise in psychology and anthropology, selected based on their familiarity with the relevant theoretical frameworks and their ability to implement a standardized coding strategy. Prior to the commencement of coding, the collaborators received detailed instructions regarding the theories involved – Image Schemas, Terror Management Theory (TMT), dimensions of social relations, cognitive anchors, System 1 and

System 2, and the cognitive and conceptual metaphors. They were also instructed on how to identify and evaluate cognitive processes. The units of analysis were defined as individual paragraphs within the body of the texts. To guide the coding process, evaluators were provided with, in addition to the complete texts, sheets containing vectorized words, which they were instructed to associate with domains of Image Schemas. This approach facilitated the consistent assignment of text segments to specific categories within the image schemas. The evaluators also used predefined codes to mark text segments relevant to the domain of social relations (community, family, spirituality), the components of TMT (culture, self-esteem, mortality), cognitive anchors (spatial, temporal, personal, social), System 1 and System 2 (Pherson *et al.*, 2024), and the four cognitive and conceptual metaphors (Life is a Journey; Death is a Transition or Change; Time is an Entity; Emotion is like a Container). The evaluators were required to pay particular attention to the cognitive processes present in the text, being responsible for identifying and classifying examples of causality, abstraction, temporality, spatiality, and personification (Jonassen & Ionas, 2008; Wang, 2005; Liberman & Trope, 2008; Schneider, 2023; Sakamoto & Hamasaki, 2015). This stage required careful interpretation of the text and consistent application of the operational definitions of the cognitive processes. To ensure the validity and reliability of the coding process, inter-rater agreement was calculated using Fleiss' Kappa coefficient. The resulting value, Kappa = 0.88 ($p < .001$), indicates excellent inter-rater agreement, suggesting a remarkable consistency among the three evaluators and a high degree of consistency in applying the coding scheme.

The complete code can be found in the supplementary materials: <https://doi.org/10.17605/OSF.IO/M3DZP>.

Part I

1. Image Schema Identification: Image schemas were identified using the *analyze_image_schemas()* function. This function incorporates the UDPipe natural language processing model (Straka & Straková, 2017) to identify and quantify the schemas CONTAINMENT, PATH, FORCE, VERTICALITY, BALANCE, and CENTER-PERIPHERY within the texts based on patterns of semantic significance.
2. Semantic Group Definition and Analysis: Semantic groups were defined according to the expert evaluators. These groups were then analyzed according to concepts contributing to Terror Management Theory. To conduct this analysis, the *analyze_tmt()* function was created, containing the lists "mortality salience," "cultural worldview" and "self-esteem". The results were then interpreted within the coping paradigm concerning existential anxiety.
3. Social Relations Analysis: The *analyze_social_relations()* function was created and implemented, containing the *social_patterns* object and the lists family, community, and spiritual to analyze the social dimension attributed to the funerary event.

Part II

This section comprises functions and methods for visualizing the results, including distribution plots for image schemas, social relations, and elements of Terror Management Theory. Further methods performed include conducting the chi-square test, followed by a graph of the temporal evolution of the schemas.

Part III

This section details a series of statistical procedures performed for the adjacent examination of cognitive dimensions and residual emotions that may be present. An analysis of cognitive processes was conducted using the *analyze_cognitive_processes* function, which contains the lists: causality, abstraction, temporality, spatiality, and personification. By observing the interactions, we can discern the expression and structuring of cognitions within the songs. The subsequent analysis involved cognitive complexity, using the *analyze_cognitive_complexity* function, which utilizes TTR (type/token ratio) for calculating the index of semantic diversity, lexical density, and average sentence length. Another function: *analyze_emotional_cognitive_profile*, was implemented to visualize the ratio between affective and cognitive indices, followed by the *analyze_dual_processing* function to observe the factors influencing the emergence of cognitions, specifically in evaluating the ratio between implicit or explicit processing (Barrouillet, 2011). The final function, *analyze_cognitive_anchors*, analyzes cognitive anchors using lists of spatial, temporal, personal, and social dimensions.

3. FINDINGS

Following the analyses, it can be observed that the CONTAINMENT/CONTAINER schema has the highest mean ($M = 5.75$, $SD = 2.22$), suggesting a high frequency of this schema across the four texts. In other studies, the dominance of the CONTAINMENT schema suggests a feeling of being overwhelmed by the grief caused by the death of a loved one (Gibbs, 2008). The second most prevalent schema is VERTICALITY ($M = 3.25$, $SD = 1.71$). The schema with the third highest mean is FORCE ($M = 2.00$, $SD = 1.50$). The PATH and BALANCE schemas both have means of ($M = 1.50$), but the standard deviations differ, with the former having ($SD = 1.00$) and the latter having ($SD = 0.58$). The schema with the lowest mean is CENTER-PERIPHERY ($M = 1.25$, $SD = 0.50$). To evaluate the distribution of the schemas, a chi-square test was conducted ($\chi^2 = 36.2$, $df = 5$, $p < .001$). The results indicate that the schemas are not uniformly distributed, suggesting peculiarities within each included song. The distribution of these schemas can be observed in Figure 1. The presence of such an imbalanced pattern between schemas and their active dynamics constitutes key elements in grief management, demonstrating the tendency of communities to process the phenomenon of death and maintain a connection with the deceased beyond physical disappearance (Pearce & Komaromy, 2022). In other research, such a non-uniform arrangement of Image Schemas provides a cognitive structure for the expression of grief through metaphorical thinking (Reventlow *et al.*, 2008).

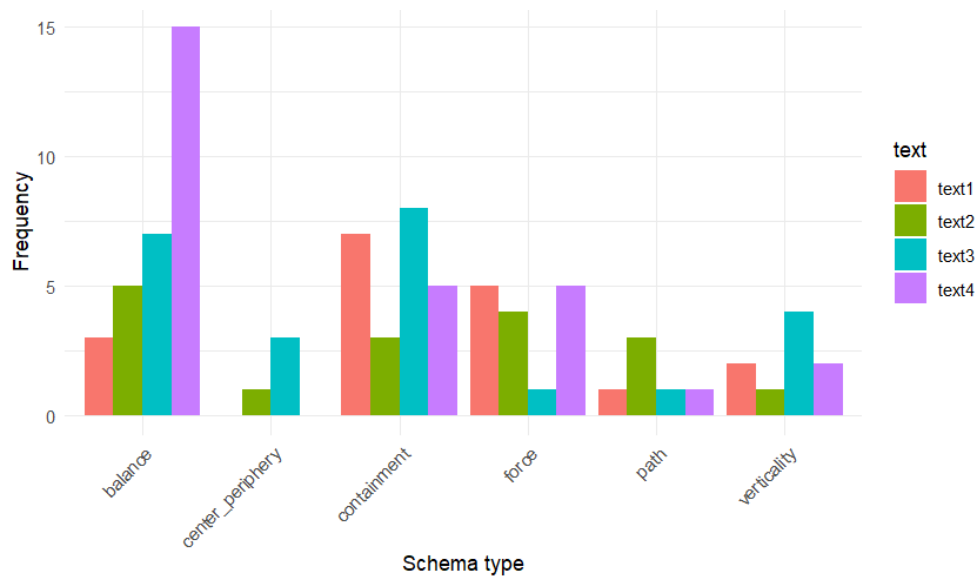


Figure no. 1. The distribution of image schemas in texts

Between the periods when the song texts were collected, a number of political, social, and economic changes took place, a major event being the onset of World War II. Until 1938, it can be observed that the schemas intersect and exhibit dynamism, but around 1939 towards 1950, they have a linear trajectory toward lower scores. The visualization of these shifts can be observed in Figure 2. In the correlation analysis of Image Schemas, Containment correlates negatively with Path (-0.82), as does Force with Center-Periphery (-0.99). Conversely, the Containment and Verticality schemas have a strong positive correlation (0.86), as does the Verticality schema with the Center-Periphery schema (0.74), as detailed in Table no.1. This phenomenon is presented as the Threat-Rigidity Hypothesis, which posits that during conflagrations, conflicts, or social crises, individuals experiencing these events become less flexible in their thinking and interpersonal relationships, creativity experiences a sharp decline, their perspectives on life and interests narrow dramatically, and magical thinking also diminishes significantly (De Dreu & Nijstad, 2008).

Table no.1.
Images Schema correlations

	containment	path	force	verticality	balance	Cen-Per
containment	1.00	-0.82	-0.49	0.86	-0.15	0.42
path	-0.82	1.00	0.08	-0.66	-0.31	0.00
force	-0.49	0.08	1.00	-0.80	0.15	-0.99
verticality	0.86	-0.66	-0.80	1.00	0.07	0.74
balance	-0.1572	-0.31	0.15	0.07	1.00	-0.17

Cen-Per	0.42	0.00	-0.99	0.74	-0.17	1.00
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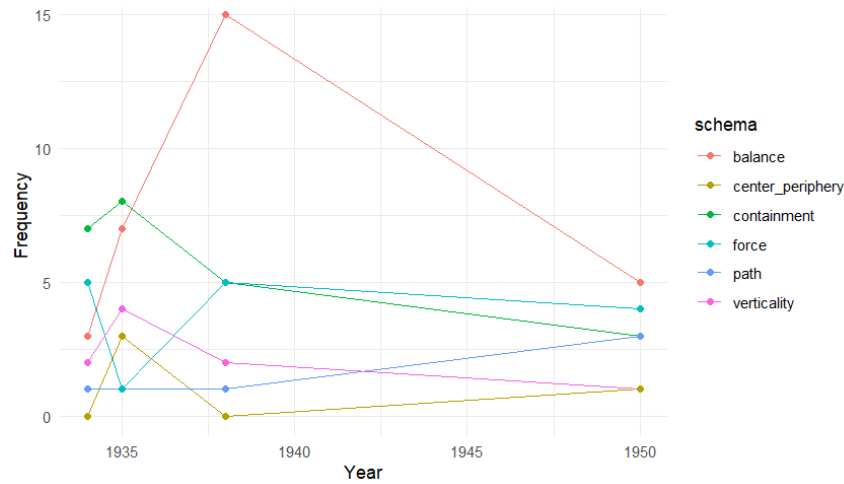


Figure no. 2. Temporal evolution of Image Schemas

The concepts underpinning TMT (Terror Management Theory) are present in relatively equal proportions. Specifically, the variables Culture and Self-Esteem each account for 35.71%, and Mortality accounts for 28.57%. At a particular level of influence, culture provides individuals with meaning, value, and permanence (Miller, 2024), while self-esteem reinforces the sense of personal worth (Schmeichel *et al.*, 2009), and mortality compels adaptive behavioral changes (Routledge *et al.*, 2010). However, the analysis of social relations establishes a clear ranking of its categories within the song corpus. Family accounts for 52.94%, Community 29.41%, and Spiritual, an unexpectedly small percentage of 17.65%.

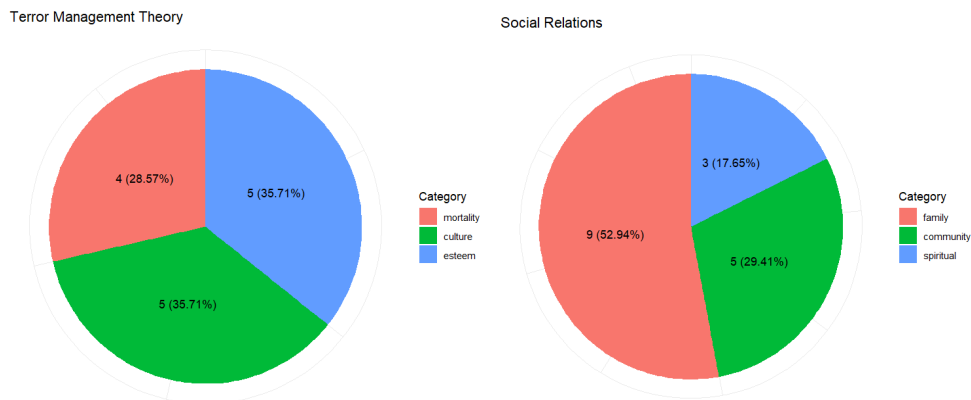


Figure no. 3. TMT and Social relationships analysis

According to the cognitive complexity analysis, song number 165 from the village of Seliște, Mehedinți exhibits the highest score for cognitive complexity (CC = 0.877). The remaining songs, originating from Gorj (46 – Rasovița and 171 – Prociua), have a score of 0.634, and song number 168 from Petrișani scores 0.659.

The second song also exhibits the highest score for emotional intensity, 0.7, followed by the third song with a score of 0.5, and then the first song with a score of 0.1. The developed model did not detect a value for emotional intensity for the first song. In Systems 1 and 2 thinking processes, the ratio between song 2 and 4 has a value of 2, suggesting a processing more directed towards intuition and affective implications (Bellini-Leite, 2013). Spatial anchors are the most present in the third song, with a frequency of 10, followed by the second and third songs, which have a frequency of 4, and the last with a frequency of 1. The analysis of cognitive processes revealed a very high proportion of causality (35.14%), followed by personification and temporality (18.92%), which represents the ability of people to perceive, estimate, and measure time (Brooks & DeNigris, 2019), abstraction (13.51%), and spatial cognition (10.81%).

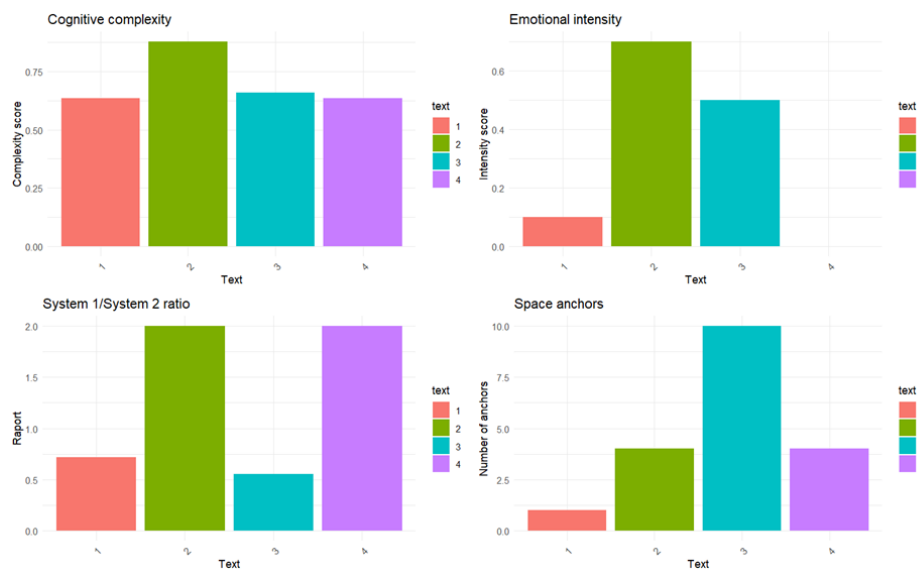


Figure no.4. Primary cognitive analysis

Further analyses (Figure no. 5) involved examining cognitive anchors and conceptual metaphors. The personal anchor, representing the identification of individuals, is the most frequent, peaking in the first text (17 instances) and reaching its lowest count in song 3, with only 5 instances. Social anchors fluctuate between 4 and 11, with the first song containing the highest number (11), indicating the strongest social representation. Spatial anchors are distributed as follows across the texts: 1, 4, 10, and 4, in sequential order of the songs, with text 3 demonstrating the most spatially delimited focus. An increased frequency of social and personal anchors suggests the triggering of reconstruction of assumptions about the self and the world following the loss (Matthews & Marwit, 2004). Temporal anchors show low consistency, ranging from 1 to a maximum of 3, indicating a weak mental representation of time, a phenomenon resulting from the disconnection between the phenomenological experience of time and the external world (Hughes, 2022). The cognitive metaphor representing emotional processing, or containing emotions, is the most prominent, particularly in the first text with a frequency of 15 and in the fourth, with a frequency of 14, thus demonstrating the capacity of these structures to facilitate the psychological processes involved in meaning-making related to the loss of the deceased (Tay & Neimeyer, 2021). The

other metaphors are less represented; the metaphor for conceptualizing the entity of temporality appears twice in the first three texts and four times in the last text, while the metaphor for the character of life as permanent change or travel is most prominent in text 1. The metaphor for death as a transition is the least frequent, detected only in texts 3 (1 instance) and 4 (2 instances).

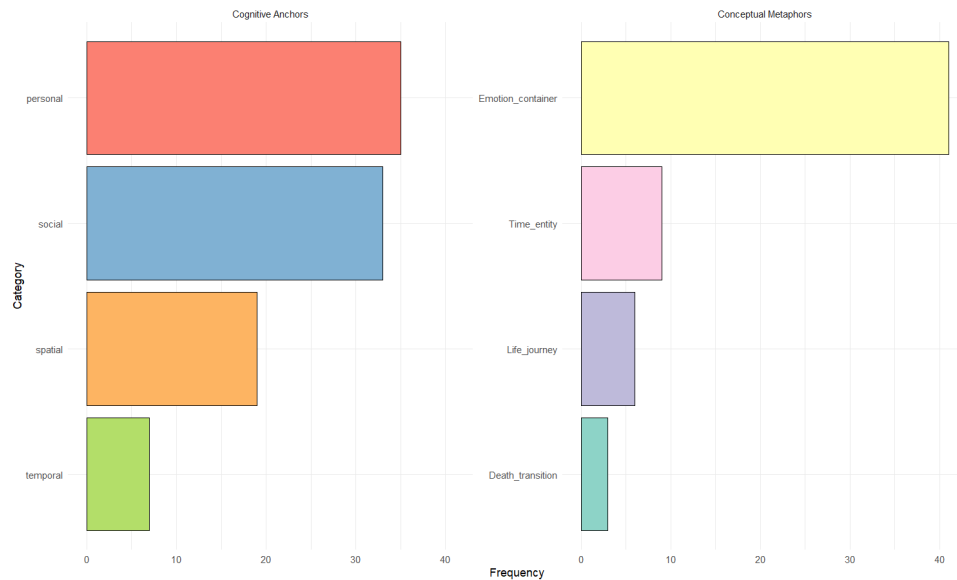


Figure no. 5. Cognitive anchors and conceptual analysis

4. DISCUSSION

From the obtained results, the CONTAINER/CONTAINMENT schema emerges as the most frequent in the text corpora, suggesting a persistent preoccupation, concern, and anxiety among the living regarding the location of the deceased's existence. This mirrors findings in Ronderos *et al.* (2021), where specific CONTAINMENT schemas were used to exemplify the difficulties or restrictions generating psychological distress. Our results also indicate a desire to maintain a connection to the physical world for as long as possible, until the deceased is prepared according to customs for their imagined journey to other realms. These findings support the well-established phenomenon that concern for the afterlife is directly related to belief in judgment and the subsequent receipt of rewards (Rose & O'Sullivan, 2002). This observation further reinforces the presence of a belief within the traditional collective mentality in the duality of human existence and the valorization of the imaginary in mitigating the negative effects of grief and fostering resilience. This aligns with a socio-ecological approach that emphasizes the interaction between individual and social adaptive systems (Kuldas & Foody, 2022). Our results further support the theses advanced by Hodge (2011), which posit that acceptance of the afterlife is an imaginative process already internalized within the personal system, and that this acceptance demonstrably represents social cognition oriented towards others. This phenomenon is observed in the social analyses of the texts, specifically through the dominance of the Family category (52.94%) compared to the Spiritual dimension (17.65%) in the analysis of social relations. Finally, and also supported by this

work, Hodge proposes that the deceased retains a body or a form of human existence after death and continues their obligations towards the new world or community they will join. To fulfill these tasks, the physical form of the deceased requires preparation and a postponement of departure, a factor also reflected in the prominence of the Container schema. The observed decrease in Schema scores coinciding with the onset of World War II may indicate a transformation of the collective mental state resulting from the adoption of various stress reduction strategies or the avoidance of stressors due to anxiety generated by war, extremist policies, or socio-economic and political uncertainties (Zmigrod, 2020). Analyzing the component dimensions of Terror Management Theory suggests a balance among its core strategies. Roughly equal scores for existential anxiety, cultural worldview, and self-esteem, followed by mortality salience, imply that this balanced interaction potentially promotes defensive behavioral activation against threats while simultaneously fostering prosocial values (Burke *et al.*, 2022). These phenomena observed in this study are further supported by the high prevalence of causality (35.14%) within cognitive processes, suggesting a greater preoccupation with explaining, understanding, and rationalizing the phenomenon of death within the traditional community than outside it. This is also reflected in the weak representation of the death-transition cognitive metaphor. Conversely, metaphors related to emotional processing indicate a greater concentration within the social group involved in the funeral act on managing and processing the emotional aspects of loss, and in managing cognitions characterized by uncertainty about the dynamics of life after death. This phenomenon is also observed in other cultures where emotionality served to honor the deceased and offer solace to their relatives (Afreh & Ofosu, 2024). The perception and reinforcement of self-identity and relational identity are prioritized over the delimitation of temporality, reflecting the disturbances arising from the intrusion of death within the restricted social or family framework. Following this emergent imbalance, a process of restructuring personal meaning and social relations implicitly arises, emphasizing the vital role of social connections in coping with grief and preserving self-identity in as healthy a manner as possible (Handsley, 2001).

While this qualitative study offers valuable insights, it is important to acknowledge certain limitations inherent to text analysis research. These limitations include the potential for inadequate coverage of all relevant constructs, challenges in ensuring the validity of computational social science measurements, potential influences of genre-specific text characteristics, and the ongoing effort required to comprehensively capture contextual nuances and mitigate potential biases within the analyzed texts. Future research requires the inclusion of a larger corpus of Zori songs, categorized by the specific moments of the funeral ritual, geographical region, and historical period.

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