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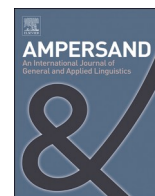
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# Crisis narratives and (dis)placement: Space, time and earthquakes in Mayotte

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## ABSTRACT

Narrative analysis can serve as an interdisciplinary bridge for understanding social phenomenon, such as natural disasters, through a linguistic lens. This article analyzes narratives about an unprecedented swarm of earthquakes experienced by inhabitants of the island of Mayotte in the Mozambique Channel. This panic-inducing crisis had people leaving their homes in the middle of the night in order to gather outside in search of refuge. Stories are analyzed using the threshold chronotope, exploring liminality, evaluation, and (dis)placement in time. Findings show that movement in space and time plays an important role in plot development. Analysis of evaluative language reveals how storytellers assess events and express affect. During the night, exterior spaces become indexed with safety and togetherness, whereas interior spaces index isolation and death.

## 1. Introduction and research questions

The largest observed underwater volcanic eruption leading to the “birth” of a volcano in the Indian Ocean has recently made headlines in several newspapers and magazines (Flynn, 2020; Ter Minassian, 2019; Wei-Haas, 2019). Located 50 km off the coast of the island of Mayotte, the most recent French department, the volcano has also caught the attention of seismologists, as this “birth” was not without its labor pains. Starting in May 2018, a series of unprecedented earthquakes were recorded on Mayotte, typically sheltered from such phenomenon. The island’s largest ever recorded earthquake occurred on May 15, 2018, a 5.9 on the Richter scale and which was a part of an earthquake swarm (*essaim des séismes*). For months, inhabitants lived through hundreds of earthquakes, evoking panic, fear and distress due to their unknown origins and the lack of disaster preparedness. Crisis units were temporarily deployed to address these concerns, and now governmental entities and scientists have been left trying to figure out how to adapt disaster relief and prevention policies to the local context, where linguistic and cultural practices differ from institutional and scientific ones. Effective institutional disaster relief and prevention initiatives have been known to be in conflict with local practices (Chester et al., 2019; Paradise, 2008). A first step in understanding how to implement such initiatives is to understand the responses to and the thoughts toward such disasters, such as people’s reactions during and after an earthquake.

One simple approach is through storytelling. Narratives can serve as an entry point for understanding how events unfolded and how people

evaluate them. In this study, people describe surviving the nights in which frightened villagers left their houses to gather outside in open spaces until dawn, the first call to Islamic prayer, or fatigue incited them to return home. Through taking into consideration chronotope and liminality, this article examines short narratives in two ways. First, it looks at how geographical space and movement restrained in time serve as vehicles for plot development in stories that recount the earthquake crisis of May 2018. Beyond looking at temporal aspects, it addresses calls for analysis of place in narratives (deixis of space) in addition to temporal indices (Baynham, 2003, 2015; De Fina, 2003; Schiffrin, 2009). It discusses how location and movement change over the course of the night (deixis of time). Second, the narratives themselves are a specific site of struggle, as they involve describing certain moments lived during a period of stress: a series of unprecedented earthquakes that terrified inhabitants of Mayotte for months. The storytellers project certain opinions, including the question of the self and group (deixis of person). As such, the article also explores evaluation via judgement and affect as expressed through the narratives (Martin and White, 2008). Thus this study seeks to answer two research questions:

1. How do space and movement serve as vehicles for advancing the plot in relation to time, in consideration of the threshold chronotope?
2. How do the narrators evaluate events in terms of judgement and affect, in consideration of social meaning?

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## 2. Bakhtinian theories and narrative analysis

### 2.1. The threshold chronotope

Various Bakhtinian theories (Bakhtin, 1981, 1986) serve as frameworks for analysis, including those of the chronotope, dialogism, response and evaluation. Bakhtin's theories are adopted because they inspire linguistic research that account for context as well as analyses that are context-specific and take into consideration scale (Blommaert, 2015). Beginning with chronotope, I adopt Silverstein's definition, in which it is "the temporally (hence, chrono-) and spatially (hence, -tope) particular envelope in the narrated universe of social space-time in which and through which, in emplotment, narrative characters move" (2005, p. 6). The *time* envelope of this study is scalar along three levels: a temporal scale of months, the hours between dusk and dawn, and the moment between earthquakes. The particular scale that frames the narratives is that of the time between dusk and dawn, as stories often begin at night and end with the sunrise or the first call to prayer of the day the *Fajr*, also known as the 'dawn prayer'. The *space* envelope in the narrative is Maore villages, and varies between the interior of houses and the exterior, such as open spaces near mosques or soccer fields. Participants move the stories along via their own movements between these spaces. Therefore, the time-space envelope for these narratives occurs during the night in villages in Mayotte during the earthquake crisis of May 2018.

One specific chronotope is that of the *threshold*, where an individual is faced with a life-altering decision in light of a crisis and which is "highly charged with emotion and value" (Bakhtin, 1981, p. 248), and which is also linked to the chronotope of *mystery*, or the unknown (p. 249). I adopt the threshold chronotope to mean a time and place envelope that involves a crisis requiring (re)action. Indeed, these narratives of enduring the night throughout the earthquake crisis in Mayotte align with the threshold chronotope. Thresholds are a type of liminal space which can be observed in the narratives along various scales. For one, there is the liminal space between earthquakes, where one ends and the other begins, at a moment unknown. At the start of the crisis, the government communicated that the island was experiencing a "swarm" of earthquakes and that inhabitants may feel other quakes. This liminality could be seconds, minutes, hours or days. Second, the narratives occur not only between daylight hours but also between the five daily prayers in Islam. In addition, the earthquakes occurred between two significant events on the island: intense strikes from February through April and the holy month of Ramadan starting mid-May. These liminalities are thresholds between one state and another. The narratives involve storytellers and participants who are at a threshold, filled with uncertainty and in need of action. The threshold chronotope, liminal spaces and movement serve as frames for analyzing the earthquake narratives. Indeed, liminality and chronotope have been argued to be important approaches for narrative research (Baynham, 2015).

In addition, analyzing narratives via chronotopes allows for exploration of the time and place of the story as well as the time and place of the storytelling event, so that the two can be considered together during analysis (Lempert and Perrino, 2007). As Bakhtin notes, though these two events are distinct, they are "indissolubly united in a single but complex event" (1981, p. 255), such that the narrated event and the event of narration are intertwined and can influence one another. In this study, the two contrast not only in time (a difference of about a year and a half) but also by context. By the time the stories were told, the earthquakes had abated and concerns about the earth shaking were far from participants' minds.

### 2.2. Dialogism, response and evaluation

Bakhtinian theory also lends itself to narrative analysis via dialogism. Discourse is dialogic and participatory, as a storyteller may have a specific interlocutor in mind, or the story may be polyphonic, with

various voices contributing to the narrative. Dialogism assumes all statements to be embedded in a web of response and meaning such that interpretation varies according to context and speaker. This variation exists on a scalar level (Blommaert, 2015). For example, the earthquake narratives often include the act of reading (*usoma* in Shimaore, *midzoru* in Kibushi and *lire* in French). While on a larger scale, one might understand this to mean reading of any sort of text, reading on the smaller scale of Mayotte and in the context of the narratives most often indicates recitation of holy Islamic texts, such as particular surahs that are read while praying. In this time-space envelope, reading indexes a specific, social meaning connected to religious activity. While Bakhtin uses the term *dialogism* rather than *indexing*, the two are similar in that they denote language that references social meaning, such as the significance of the verb "to read" in this study. Language is not a one-to-one word-to-meaning phenomenon, rather significance shifts according to context and speaker, and *that* discourse comes already saturated with various values. Indexing changes according to context and can refer to deictic indexing or indexing of social meaning (Eckert, 2008; Johnstone et al., 2006; Labov, 1972a; Silverstein, 2003).

As the word "social" in social meaning suggests, discourse does not exist in a vacuum but in a society, with interlocutors. One aspect that goes hand-in-hand with dialogism is response. Response includes some sort of evaluation where an appraisal or judgement is being made. This term is similar to other terms used, such as stance (Jaffe, 2009). Discourse analysis research has been inspired by Bakhtinian theory, including the Appraisal framework (Martin and White, 2008) and its methods for analyzing evaluation via judgment, gradation, and affect (for a recent use of this framework in discourse analysis, see Ross and Caldwell, 2020). This study focuses on judgement and affect, which look at language concerning opinions and emotions, respectively. This is because "understanding is impossible without evaluation" (Bakhtin, 1986 p. 142), such that as narrators "make sense" of the events in the stories, they inevitably evoke certain viewpoints, certain sensations. Approaching narratives from a dialogic standpoint allows for the use of interactive methodologies on narratives that take into consideration local, evolving social practices (Georgakopoulou and De Fina, 2011) as well as scalar analyses (Blommaert, 2015). Such approaches have also been used to address discourse concerning earthquakes, emotions and scale, specifically in the media (Yell, 2012).

## 3. Narratives and making sense of crises

Narrative inquiry has served a variety of purposes in linguistic studies including for language development (Bamberg, 1997; Pavlenko, 2008) and understanding identity (De Fina, 2003). More recent work explores the intersection of chronotope, narratives and discourse analysis (De Fina, 2019; Georgakopoulou and De Fina, 2011; Perrino and Kohler, 2020). Definitions of narratives certainly vary and have long expanded since the groundbreaking research of Labov and Waletzky (1967), including the incorporation of "small stories" (Georgakopoulou, 2007). The collected work of De Fina and Georgakopoulou (2015) shows the various ways in which narratives can be defined. Nevertheless, the definition adopted in this study is that a narrative is a "recount (of) events in a sequential order" (De Fina, 2003 p. 1). Building on this basic definition, this study also incorporates the role of space in narratives, which is often just as important as time sequencing, in that "narrative may be more about place itself than about the people who populate it" (Schiffrin, 2009 p. 423). More recent research explores the role of space and how it takes a prominent place in narrative analysis (Baynham, 2015; Perrino, 2015; Perrino and Kohler, 2020; Ryan et al., 2016).

The last key component of a narrative adopted here is the complicating action (Labov, 1972b; Labov and Waletzky, 1967), also known as an unexpected event and the "psychological/physiological responses" that follow it (Ochs and Capps, 2001, p. 173). The unexpected event in these stories are the unprecedented and relentless earthquake swarms, which evoke many vivid psychological and physiological responses.

Expressed through language, these mental, emotional and physical responses are intertwined with the space-time envelope in which they occur. Reactions during a crisis may vary in ways that are perceived in the aftermath as sensible or absurd. Narratives that recall crisis events involve work on behalf of the narrator in deciding how individuals are portrayed via actions and reactions.

In fact, various studies addressing crises exist in the social sciences and linguistics, including earthquakes, via narrative analysis. Storytelling may serve as an effective way for individuals to discuss disturbing and life-altering natural disasters, such as with the narratives in literature collected over time on the devastating January 2010 earthquake in Haiti (Douglas, 2016). Another project, known as the UC QuakeBox Project, came on the heels of the devastating earthquake in Christchurch, New Zealand in February 2011: Researchers from multiple disciplines invited inhabitants to share their earthquake experiences, which were recorded via audio and video, for a total of 120 h or 722 stories (Clark et al., 2016). The stories have been used, for example, to look at emotions in reactions to the earthquake by teachers (O'Toole, 2017). Another avenue for analysis of crises stories such as earthquakes gives insight into how lived experiences and embedded culture shape stories, particularly in terms of evaluation of events, including explications for causes of such natural disasters. Evaluation can come in terms of expressing emotions as a reaction (Xu, 2013) as well as explaining why earthquakes occur, such as due to angering deities and sinning (Denzin-Gergan, 2017). What is more, disaster narratives can help evoke, erase or develop certain identities, both individual and communal (McKinnon et al., 2016). That is, understanding stories can help researchers understand the role of sense making in the process of recovery from a disaster.

## 4. The study

### 4.1. Setting at the time of the narrative events

The goal of this study is not to offer an exhaustive presentation of Mayotte. For detailed descriptions of Mayotte, see Blanchy (1988), Lambek (2018), Martin (2010), Rombi (1984) and Walker (2019). However, some information is needed to understand the context in which the stories and the storytelling took place. Mayotte is a small, tropical French island in the Comorian Archipelago located between Mozambique and Madagascar. Besides French, the two principal languages are Shimaore, a Sabaki-Bantu language spoken by around 80% of the population and Kibushi, an Austronesian language stemming from Malagasy, spoken by 15% of the population (Jamet, 2016). Earthquakes are rare on the island. When they do occur, they are small in size and may not be felt. Before 2018, the largest earthquake recorded was a magnitude 5.2 in 1993 ("Essaim de séismes," 2019). At the time of the narrating event in 2019, the earthquakes had subsided. The postcolonial context involves various socioeconomic issues related to development and immigration. While island life is in many ways peaceful and relaxed, heavy immigration, unemployment, poverty and insecurity remain a constant point of contention. Social unrest is recurrent and often results in protests and roadblocks that interrupt daily life on the island. Before the earthquakes in May 2018, the island had gone through (once again) months of roadblocks, food shortages and protests.

In addition, Ramadan started just days after the large earthquake on May 15th. This is significant because most of the population is Sunni Shafi'i Muslim (Blanchy, 1988; Lambek, 2018; Philip-Gay, 2018; Rombi, 1984). Islam as a belief and a practice permeates many layers of island life. Local children often attend *shioni* or *madras* religious schools in addition to secular French public schools. Call to prayers, heard five times a day from mosques in nearly every village, regulate daytime activities. The first, *Fajr*, occurs about 1 h before sunrise, around 4:30 or 5:00 a.m., and the last, *Isha*, takes place about an hour to an hour and a half after sunset, around 7:00 or 7:30 p.m. Mayotte's proximity to the equator makes for relatively constant daylight of around 12 h per day

throughout the year. In addition to the 24-h time system, time is counted by daytime hours, with the first hour starting at 7 a.m. and the twelfth and final hour at 6 p.m.

Some believe the earthquakes were God's way of punishing them for their behavior (Fallou et al., 2020), which is not an uncommon belief among people of various religions. In the Quran, earthquakes stand apart from other natural disasters in their meaning because of its ties to God's retribution (Paradise, 2008). Another explanation of this rational could stem from the fact that the earthquake crisis was wedged between two conflicting events, one of hostility and dissension, the other of unity and goodwill. This was a liminal time-space on the island, an in-between period between conflicting actions. Some inhabitants linked the occurrence of the earthquakes to the (mis)treatment of immigrants as well as other sins, such as those associated with Western practices such as alcohol consumption, individualism and Western clothing.

### 4.2. Participants and methods

A total of 37 individuals, of which 10 men, participated in telling short earthquake narratives from April to November 2019 in Mayotte. Local university students and personnel volunteered to participate and ranged between 22 and 49 years of age, but most were in their early 20s. Participant background varied, with some coming from generations of families living in Mayotte, while others were first generation inhabitants, having immigrated from Anjouan, often with modest living conditions. Due to the voluntary nature of the fieldwork, language and gender are not representative. Participation was voluntary, and the study followed standard research ethic procedures, including a participant consent form, which was signed by both parties after having discussed the study objectives. I had gained a certain amount of trust with participants and believe they felt comfortable volunteering to talk to me, since at the time of the study, I knew all of them personally (except for one) for months if not years. To this day, I am in contact with many participants on a personal and/or professional level.

The storytelling took place in a larger sociolinguistic project that looked at various linguistic factors, such as the use of implosive sounds, in an attempt to understand variation in Shimaore and Kibushi using sociolinguistic interview methods (Schilling, 2013). To increase sound quality in the recordings, participants were recorded on the university campus in a soundproof booth using a condenser microphone and were asked to elicit certain words, describe images, and discuss the earthquake crisis of May 2018, and one particular night when many people left their houses to sleep outside, at the behest of a warning made in person or via telephone. First, the participant and I discussed in French the earthquake swarms experienced the year before, and we talked about the fact that on at least a couple nights, many villagers left their homes to go outside. All participants recalled these events and were eager to discuss their experiences with me. Next, I mentioned that I would like to hear them describe their experiences in Shimaore or Kibushi and asked them to imagine that they were discussing these events with a friend or family member who was not in Mayotte when the earthquake swarm occurred, such as a family member or friend in mainland France. That is, for these narratives, I asked participants to imagine they were talking to such a family member or friend and to explain what happened that night. First, this was in the interest of having a Labovian "danger of death" type of recording in which participants pay little attention to their speech. Second, it was also done in the interest of understanding more about how individuals lived through the earthquake crises. After the storytelling, I discussed the stories and the earthquake events with participants in order to obtain more details on their (re)actions.

Regarding context, these stories were told after the earthquakes had subsided and after most people understood that earthquakes cannot be predicted. Thus, the setting for discussing the events could be described as semi-formal involving the retelling of a relatively frightening event that was experienced in the recent past. Narratives ranged from 30 s to 7

min with the average being nearly 2.5 min and occurred in Shimaore (28), Kibushi (8), and French (1)<sup>1</sup>. Recordings were transcribed and translated by bilingual Shimaore-French and Kibushi-French speakers, after which they were verified and analyzed using the software FieldWorks 9.0 (“Fieldworks,” 2020) and RQDA (Huang, 2012).

For Question 1 regarding space and chronotope, the narratives were coded according to deixis of space, time and person, including the points of intersection among them. For example, cross-referencing was made to look at the relationship between space and time in the stories. Other language referring to time, space and person were coded as well, such as prepositions, adverbs and verbs of movement. For Question 2, the narratives were analyzed from an adapted Appraisal framework, specifically Attitude which is “concerned with our feelings, including emotional reactions, judgements of behaviour and evaluation of things” (Martin and White, 2008, p. 35). Specifically, language pertaining to affect and judgement were analyzed. Affect concerns language that index an “emotional response and disposition” such as fear, excitement and shock. Judgement concerns an evaluation of behavior. Indexing as related to social meaning and dialogic voicing were also considered during analyses.

## 5. Results

### 5.1. The earthquake narratives’ structure as related to the crisis chronotope

Most narratives begin in the evening inside the participants’ homes, thus orientating (Labov and Waletzky, 1967) the listener to a specific time and space—night in a Maore village. The complicating action starts at home, with participants receiving urgent notice to immediately leave the house to find shelter in an open space or to pray for protection. Notifications come in person, such as being woke up by a relative (10 occurrences) or a neighbor (3), or via a phone call (13) or text message (6). Some report waking up because an earthquake had just occurred. At any rate, this complicating action is the moment of crisis, where individuals must decide how to respond to such news. They are at a threshold, sometimes quite literally, in which they decide whether or not to cross the threshold of the doorway to go outside. Various factors are involved in decision making, including the fact that it is late at night and people do not tend to gather together in open spaces or pray. Fig. 1 shows a diagram depicting the threshold chronotope as understood in the earthquake narratives. It shows the time-space envelope in which the stories develop and in which movement and activities occur. Read from left to right, it shows the “there and back again” use of space over time, in that the start of the night occurs indoors, the middle of the night outdoors, and the end of the night occurs once again indoors. Movement between spaces drives along the stories, as indicated by the long arrow in the center. Activities enacted while outdoors are also indicated such as praying and waiting.

Most participants describe leaving their houses with their family in direction of a parking lot, open courtyard, soccer field, or mosque, where

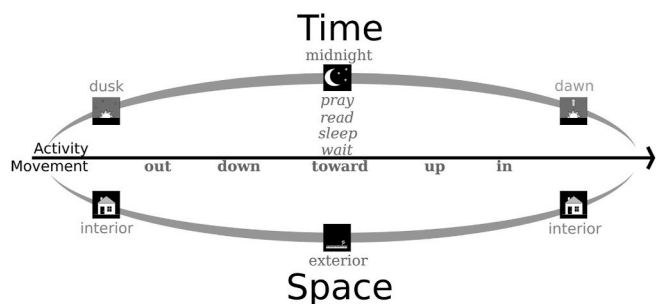


Fig. 1. Diagram showing the relationship between space and time in the narratives.

they encounter numerous individuals who have also left their homes. Some refer to leaving the house because a big earthquake (15 occurrences) or a wave (3) was going to arrive. Others left to protect themselves from falling debris (14) or to invoke God’s mercy through prayer (10). Once outside, events include reading holy texts (21), praying (21), reading the news online or via social networks (6), talking (5), waiting (6) and sleeping (6). Some brought mattresses and mats to sleep on. Other narratives describe individuals who take their things and go up to the mountains for refuge, and others that go down to the sea to see if the waters were rising or if the sea was agitated. Stories are often resolved by participants returning to their homes either at dawn (14) or when overcome with fatigue (8). Some returned because no earthquake happened (2) or because they realize that earthquakes cannot be predicted (1). Time spent outside ranged from 30 min to the entire night, with many staying outside for hours. Some narratives included a coda where they summarized the events in one sentence. Only two narratives involved narrators staying in their houses and not joining the others outside.

### 5.2. Space and movement as a vehicle for plot development

Movement between spaces is one of the dominant means of plot development. People in the stories start inside the home, exit the home, move to an open space, then return to their homes after some activity. The narratives begin with action verbs of leaving or exiting: *ulawa* (Shimaore, from now on Sh), *miboka* (Kibushi, from now on Ki) and *sortir* (French, from now on Fr). Other words related to movement include *uendre* (Sh) and *mandeha* (Ki) for “to go” and *utrala* (Sh) and *milefa* (Ki) for “to flee”. Adverbs denoting “outside” were often accompanied with these verbs, including *vhendze/mwendze* (Sh), *antani* (Ki), and *dehors* (Fr). Once outside, verbs related to movement continue to advance the stories, as the storytellers describe themselves or others moving up in the village, such as *uheya* (Sh), *manunga* (Ki) and *monter* (Fr). Others moved in a downward direction to regroup at an open space or to check on the sea, *ushuka* (Sh), *midzutsu* (Ki), *descendre* (Fr). Once grouped outside, activities continued (such as reading, praying, talking) but movements stopped, with people sitting or waiting for a period of time *uketsi* (Sh), *ubaki* (Sh), *mipetraka* (Ki), *s’asseoir* (Fr), *rester* (Fr). Note that in Shimaore *uketsi* can mean sit or wait, and that *ubaki* means to stay or wait. Near dawn, new movement serves as a resolution in the narratives, as villagers returned indoors, including verbs denoting “return” such as *uridi* (Sh), *uregeya* (Sh), *mipudi* (Ki), *rentrer* (Fr), *retourner* (Fr) and reference to “at home” *dagoni* (Sh), *antanana* (Ki), *à la maison* (Fr). Extract 1 shows a young woman’s narrative that demonstrates how movement is used during the narratives.

#### Extract 1

##### Original Shimaore Version

1. *Uku*, isimayinzi *suku iyo*, wami tsika- wami tsika tsilala
2. Amwesa, amwesa mwadzani wangu anihiri telefoni asinambia aamba ... “Namuhime **mulawe mwendze** mana ... mana **yintsi idhihi**.”
3. *Wami* nahilala *wami* lala swafi. *Wami* ata tsikia zo zivirao **mwendze**.
4. Tsihimi nisiona *wantru wasilawa keme, wasalia wasilia*.
5. Nisimwona mayangu **asisoma**,
6. Nisimwona mwananyangu mtiti **kaparidzo angia mkirini angia** mkirini
7. Nisiona mwanaynangu mutrumama **aketsi asisoma msafu, asisoma yasini**.
8. Tsimudzisa aamba, “**Iyo trongo trini wantru walawao keme tu?**”
9. Anambia aamba **ntsi idhihi** ata **vani wantru wahambilwa walawe mwendze**.
10. *Wami*, vu aamba tsika tsilala, tsihimi, tsipindri.
11. Lera **nalawa mwendze** nisiona *wantru wengi* mana wami **ketsi karibu** na mkiri.

12. Safeke amba nisona *wantru wengi wahimiliya* mkiri. Wasalia wavingi djavi, wasalia wavingi magodoro, **waketsi harina bandrari** lamkiri, *wasisoma*.
13. *Wami, tsendre tsiwapara, rilawa piyasi hatru rendre riwapa, risisoma*.
14. Amwesa *ribaki* ata **dakika mbila**, ntsi *ile ija idihi tsena*.
15. *Wantru wahandrisa ulia wantru wasihandrisa usoma swafi tsena, vulawa mafundi*.
16. Wasalaya ari **wasiheya anteniju huju hoho** warendre wadzame, *neka ntsi idihi kawasife*.
17. Wami tsirongoa amba **tsisilawa** amba **nisendra anteniju, nisi-baki** kamwe **vale**, tsiendra nadra dzitria yela.
18. babagu **angia** mkirini aswali. Lera aswali **arendra** nunua buji, apatsa **vale rakaketsi** mana madza **uku** uka ungia, **andra** ripatsiya **mwendze vale rakaketsi**.
19. *Wantru waketsi vavo, wabaki vavo ata::, wantru wasomo ata::, lera namaruha rikana six heuri ya asubuhi*.

### English version

1. The **night**, I remember **that day**, I was- I was asleep.
2. Then, then my friend called me saying "Get up, **go outside** because ... because the earth trembled."
3. Me, when I sleep, I really sleep. *Me*, I didn't hear what was happening **outside**.
4. I woke up and I see *people, they're screaming, others are crying*.
5. I see my mother is reading,
6. I see my little brother who never goes to the mosque, **leave** for the mosque,
7. I see my little sister **sitting** and reading the Quran, reading the Yaseen,
8. I ask, "What is happening **here**? Why are *people screaming like that*?"
9. She says that the earth trembled and that *people* were told to **go outside**.
10. *Me*, seeing I was sleeping, I woke up and got dressed.
11. When I **went outside**, I see *a lot of people* because me, I live **right next** to the mosque,
12. Such that I see *a lot of people around* the mosque. Some bring mats, others bring mattresses and *they sit in the open space there* at the mosque and *they read*
13. *Me*, I **left to join them, we left our house, all of us, to go join** the others and *we read*.
14. After, *we waited* there for **2 min** and then the earth trembled again.
15. People started to cry, *we started to really read again*, the leaders **came**.
16. It's said that *others went up above to the antenna over there, they went to seek refuge so that if the earth trembled again, they wouldn't die*.
17. *Me*, I said that *I'm not going out there, to go up to the antenna, I am staying here, I'm not going to waste my energy*.
18. My father **went inside** the mosque and prayed. When he finished praying, he **went** to get candles to light **there** where we were **sitting** because it was **already night**, he **went** to light the candles **outside there** and we **sat**.
19. People **sat there** and **waited** for a **lo::ng time** reading, *they read for a lo::ng time*. When I woke up, **it was 6 o'clock in the morning**.

Nearly every phrase in the story involves movement and description of place either inside or outside the house. The narrator drives the story by such movements, at first by establishing the crisis and complicating action, that there is something unusual happening and that everyone is supposed to go outside (lines 2 & 3). These displacements are discussed throughout the story, weaving together the sequential actions with the

movement between them. The story continues by describing what is happening just outside her house, in front of the mosque (11 & 12) before we learn that the narrator and her entire family also decide to go outside (13). While the rest of the night involves the narrator waiting near the mosque, the story continues with discussion of movement in space by describing people that decided to seek higher ground up on the mountain, near a large communication antenna (16). The narrator describes her refusal to leave and head uphill, thus denoting her evaluation and personal decision in the situation while also progressing the story by describing a movement in space and time (17). The story continues with describing movements over the night of her father, who enters the mosque to pray before getting candles (18). As with many other stories, this story ends in the morning and the storyteller getting up to go home (19).

### 5.3. Evaluating and indexing in threshold and liminal spaces

Extract 1 also demonstrates various evaluations and personal indexing which reveal social meaning behind these stories. Affect is seen in lines 4 and 14, where people are crying and screaming. These verbs elicit negative emotions related to fear and suffering. In both instances, the following sentence involves reading. The juxtaposition of crying with reading suggests that the narrator judges the latter is in response to the former. In this time-space envelope and often in general in Mayotte, the act of reading is related to religious and spiritual practices. Narratives describe people reading these texts in an attempt to appeal to a higher power in this moment of crisis. As mentioned before, "reading" (*usoma* Sh, *midzoru* Ki) refers to the recitation of holy texts, such as the Quran and specific surahs (chapters). In my discussions, people said that reading specific passages soothes the reader such as the 36th surah, the Yaseen.

In addition, Extract 1 reveals evaluation via deixis of person. Actions are often in the plural form such as use of the inclusive *ri-* or "we" (lines 13–15) or *wa-* or "they" (4, 12 & 16). This repetition of plural deixis of person creates a judgement that the activities in the story were not lived out by one person, but by a group. At times, the narrator removes herself from the activity by using *wantru* "people" but also by *wami* "I", in which she describes her own evaluations and responses to the crisis (17). The indexing of individuals and the evaluative meaning behind it is seen throughout other narratives as well.

Extract 2 shows a narration which highlights how the events are evaluated in the stories in terms of affect and judgement via the use of person deixis and indexing of collectivity as well as other linguistic features. First, the author emphasizes the collective through the repetition of inclusive plural pronoun *wasi* "we" (lines 6, 11, 17–18) and the use of the first person plural verb marker *ri-* or *ra-* (2, 4–15, 18–19), or pronouns such as *kula mutru* "everyone" or "each person" (5, 7, 13, 15) and *piya* "everyone" (3, 5, 8, 10, 13). Indeed this latter pronoun was often seen in narratives, including those told in other languages, such as *djavi* (Ki) and *tout le monde* (Fr), when discussing actions taken. Narratives evaluate the actions in the stories as collective and shared in the village. This judgement suggests that the movements and reactions were not enacted by isolated individuals. We see the stress on the collective act through repetition of inclusive language. Considering the storytelling event (Lempert and Perrino, 2007), the stress on the unanimity may be important given that the stories were told after the earthquakes had abated and people had become accustomed to the mild earthquakes which still occasionally occur. Storytellers may be saving face, as by the time the stories were told, participants understood earthquakes better, such as the fact that they can't really be predicted, although this was already known to some.

#### Extract 2

##### Original Shimaore Version

1. Haya, mutru wangu, tsawuhambia. Tsuhambia ono **suku** ile **wwaka seisme** yaka **dagoni**.

2. Tsubambia amba vale riketsi dagoni, ata risikia shintru ya trini? Yarema uri ireme harimwa nyumba. Nyumba idridrima vale avo wantru washanga.
3. Vale ivho, wantru washanga, wantru waka prevenida amba na neka musikiya uri shintru ifanyao dradra, muhime, mulawe vwendze tahata musuketsi, mukupe piya na zitelefoni, mana mkini shia vutsovira seisme apre itsofanya dega.
4. Basi vavo lera rakiya trongo iyo mutruwagu riduburia rilawa.
5. Rilawa pwendze, lera ralawa pwendze rihono piya wantru, kula mutru ashanga, ana hamu.
6. Vavo wasi, rirongoa “Trini?” bora rirenge wana midzo watru ritowe vwendze,
7. Rirenge magodoro, rihetsi vwendze, lera raketsi vwendze kula mutru ashanga kula mutru asimia,
8. wasalia rilohirana piya reandro ketsi harimwa shandza, amba ile pare rilawe harimwa zinyumba, amba neka mori vuviri itremblement ile isipare ambana neka vua shintru ijo puhao yaja yarika.
9. Vavo rihabilwa amba ridjitahadarishe na imiri, na izinyumba bavuni.
10. Vovo piyasi ridunga,
11. mana piyasi wantru raka dekaze rilawa, mana rihabilwa amba rishuke Loni
12. be rirongoa amba karisishuka mana wasi vo rikao haju unu risika kamwe haju hunu.
13. Avo vale rilawa reandroketsi kamwe pareni, de risikia wamama amba lazimwani rihime risome, risome dua rifayne zitrongo pare Allah ari soimihiri rifanye ile.
14. Avo kula mutru ashanga amba leo, leo maore isiorora, leo risufa piyasi
15. Vo rihimi, riparana, riketsi vavo, ribua zidua.
16. Kula mutru asisoma, risisoma zi Yasine, risisoma zi Kuran, ile pare Allah aritoleye trongozo.
17. Vavo watru wangu mulio hoho kamusijua ta trongo ziviraho hunu,
18. be wasi, madza rika riono amba madza rakodra. Mana iyo lera ulalao amba ulala usikia gudru-gudru usi marua kamwe amba roho iyo kayisi makini.
19. Vavo wasi rika vhendze vavo rilala paka hasubuhi,
20. vo rakohima areganye dagoni hahe.

### English version

1. So, my friend, I didn't tell you. Let me tell you, the other **day** there was an earthquake while **at home**,
2. Let me tell you that **we were there sitting at home**, when we heard something like what? Something struck, like struck in the house. The house shook there and after people were in shock.
3. So **there**, people were in shock and they were warned that if you hear something that makes that noise, **get up, exit outside, sit down**, and turn off *all* of your telephones because an earthquake might occur and there might be damage.
4. Then **there**, when we heard this thing, we decided to hurry up and **go outside**.
5. **We left outside** and when we go outside, we saw everyone, everybody is in shock and worried.
6. **There, us**, we said to ourselves “What?” Better that we take some of our things **outside**.
7. **We take** our mattresses, we put them outside and when we sit down outside, everyone is in shock, everyone is praying,
8. others are calling for everyone to **sit down in the middle of the square**, for everyone to **leave their house**, so that if another earthquake strikes that makes things **fall**, nothing will **fall on us**.
9. So **there**, we were told to be careful with the trees and the houses **nearby**.
10. We all followed.

11. Because *all the people* whose shanties had been demolished **went outside**, because we were told to **go down to Iloni**
12. But we said that we aren't going to **go down** because we live up on top of the village and we want to **stay up here**.
13. Then we went to **sit down on the road already** and we heard the mothers say that we should get up, read, and we should pray to God to forgive us.
14. Then everyone was worried that **today, today**, Mayotte is **sinking** and that today, we are all going to die.
15. So then we **got up**, we gathered together, we sat down and we opened our book of prayers
16. **Everyone** is reading, we are reading the Yaseen, we are reading the Quran, so that God can have mercy on us.
17. So, my friends who are **over there**, you know nothing of what is going on here,
18. But us, we already saw it and already suffered. Because when you are sleeping and you hear the “boom boom” you wake up right away because your heart is not calm
19. So, **there**, we were **outside there** and we slept **until the morning**,
20. then we **got up** and **went back to our houses**.

Like Extract 1, the story distinguishes between an all-inclusive “we” and a restricted use of “we” regarding space and movement in the village. Lines 10 through 12 show how the narrator distinguishes herself and others, often immigrants of modest means, whose shanties had been destroyed earlier in the year. The storyteller and others displaced like her live up towards the top haju hunu of the village, and decide to stay there despite calls to go down to another part of the town. Deixis of space and person are used to demarcate different groups of people within the village and their reactions to the crisis.

Language demonstrating affect is common throughout Extract 2, referring to people as shocked (line 2, 3, 5 & 7), worried of imminent death (14), praying to God for protection and forgiveness (16) and other expressions of unease and worry (3, 14, 18). The use of such language throughout this story and many others emphasizes the amount of uncertainty and panic experienced at night-time during this time-space envelope. Lacking cause and positioned between two contrasting events (social unrest and Ramadan), the earthquake stories were nothing less than accounts of suffering and shock. Other stories included specific language related to negative affect when discussing reactions, such as: shock or surprise, ushanga (Sh) and kushanga (Ki); fear or to be scared, uriya (Sh) and matahotru (Ki); difficult or heavy, dziro (Sh) and mavestra (Ki); problems, taambu (Sh) and toiambu (Ki); cries or to scream, keme (Sh) and mandreseka (Ki); and to be suddenly surprised or startled, maruha (Sh) and tehuri (Ki). The French narrative included inquieter “worried” and affolé “panicked.” In one part of a story, seen in Extract 3, a narrator evaluates the situation in terms of affect and judgement through listing activities that this event prevented people from doing.

### Extract 3

#### Kibushi version

1. Fa mavestra ata meti manpatahutru.
2. Ata holu mbelu tsi matoru,
3. tsi mandri matugnaligni, matsagna,
4. tsi kutruliya.
5. tsi mihinagna.
6. kabaru nandiltra

#### English version

1. It's so difficult to the point of being frightening
2. To the point that people don't sleep
3. don't sleep at night nor in the afternoon,
4. they aren't tranquil,

5. they don't eat,
6. things are out of control.

Extract 3 highlights judgement and affect at the same time, interweaving the two forms of evaluation. Repetition of the negative marker *tsi* followed by a verb emphasizes the unprecedented occurrence and frightening scale of the earthquake swarms. This judgement highlights the lack of control of the situation and people's inability to cope, as seen in the disrupting of routine activities. Life is far from normal in this specific time-space envelope. Language indexing negative sensations and states of being fills the extract, from *mavestra* "difficult" and *man-patahutru* "frightening" (line 1) to things being *nandiltra* "out of control" (6). In addition, the descriptions in lines 2–6 create a negative sensation of unease and hardship, as not eating or sleeping are typical signs of distress. When the narrator speaks, he speaks for all Maore (people of Mayotte), thus amplifying the scale of these experiences (Blommaert, 2015).

At the same time, the highlighting of group activity which occurs outside in the middle of the night portrays an evaluation of action and hope. People in the stories unite to pray and read together rather than isolate themselves. Neighbors and strangers call on each other to leave their houses and join together in the open air. These acts, discussed in nearly all the stories, also suggest that exterior spaces in the villages are places for everyone to unite and do what they can to calm down and respond in a constructive way during the night. Positive affect was also observed, though much less than negative affect. For example, one story talks about feeling calm and at peace when the dawn prayer was heard around 5 a.m.: *Wantru lera wakiya mwadini, kawakiya tseña trongo ile, roho zijatru* (Sh), "When people heard the call to prayer, just already hearing it stilled their hearts." At the end of the story, problems are resolved and fear dissipates with the promise of day.

#### 5.4. Social meaning of spaces in the time-space envelope

The structure and evaluation of these stories create social meaning for certain spaces in time in Maore villages. Gathering and sitting outside in town squares in the middle of the night is not a habitual activity. However, the specific chronotope reverses habits and social meanings in these earthquake narratives. The liminal moment creates its own significance for space. The exterior becomes a place of refuge and togetherness. Individuals act together in an effort to manage the crisis and endure the night. If the exterior indexes these positive aspects, the interior indexes others. By corollary, during the night, the interiors become indexed with death, destruction, and isolation. Some narratives discuss isolated individuals refusing to go outside and join the others. The evaluation often given is that when it is one's time to die, or when God calls you, there is nothing that can be done. As one narrator said, *kila mbu homba mbu homba* (Ki) "what will happen will happen." Whether in the interior or the exterior, death will come for you. Place does not have much relevance.

Extract 4 shows portions of a narrative in which some individuals do not leave their homes. First, (lines 1–5) the neighbor's bedridden husband (the grandfather) cannot leave on his own and there is no one strong enough to carry him outside. He tells the narrator and his family to leave him.

#### Extract 4 Shimaore version

1. "Wami nisibaki dzangu vani, namuwendre
2. Maza kula nahankishwayo vanu, madza sebon tsihangishwayo
3. Mwezimungu de ajuao kula trongo itsoniparaho."
4. vavo ridungana piya na wanaho walawa
5. piya wasulawa vheddze, wamulishi bakoko weke wahe.
6. [...]
7. ramuhira wanyantru warambia
8. "ah wasi de rakoshuka hoho ? Asi karisishuka hoho.

9. Vahalu yo ntsi mwezimungu ajanlia mutru de vavo kamwe.
10. neka asirenga shivandre ya ntsi ya magudzuhā,
11. neka shitrentraju
12. be suku ipara"

#### English version

1. "Me, I'm staying right here in my home, you all go.
2. What is written for me is written.
3. It's God who knows all that will happen to me."
4. So they all followed and left with their children,
5. they all went outside, leaving grandfather all alone.
6. [...]
7. When we called people, they told us,
8. "Oh us, we should go down there? We won't go down there.
9. God already knows where on earth you are.
10. If He takes us during an earthquake,
11. if it's while in bed,
12. then it was our time."

We see that the grandfather remains indoors while the rest of the household and the neighborhood leave to join the other villagers (lines 1, 4, & 5). The narrator stresses that he was left *weke* "alone" (5) and in a later discussion with me, expressed her pity, sadness and guilt over the fact that they left him by himself, presumably to die, even if he was accepting of it. In addition, when she calls her sister, her brother-in-law answered (denoted as "people" in the story), saying that they were not going to leave the house and go down to join the others (7 & 8). Like the grandfather (2 & 3), the reasoning is that there is no way to control one's fate or to escape death (9–11). Interiors become indexed not only with isolation and potential death or harm, but also with inaction. Those who stay inside let fate and faith act for them. Deixis of space *vani* "here" and *hoho* "there" demarcate in space the different reactions to such a crisis, similar to Extract 2 and how deixis has been used to demarcate space and belonging (see Baynham, 2015). Furthermore, these indexed social meanings change for some at the end of their narratives. As the time-space envelope in the stories come to an end, home becomes once again a place of security. As night wears on, the interiors of the homes transform for storytellers, as they feel safe enough to go back inside, either because prayers have been done, fatigue has overcome them, or day has come. Normativity for interior places is re-established (De Fina, 2019).

#### 6.0. Concluding thoughts

This article analyzed a collection of narratives concerning earthquakes through the lens of the threshold chronotope, where people undergo a crisis in a specific time frame and in a specific place, in this case Maore villages in May 2018 during an unprecedented earthquake swarm. People are at a threshold, in which they must presumably act or perish. In the stories, this act involves deciding (or not) to step through the doorway of their homes in the middle of the night to seek refuge outside. The article specifically addressing two questions. The first concerns the role of space and movement as vehicles for narrative plot development over time. The second question involves analyzing how narrators evaluate events in terms of judgement and affect, and how such evaluation might index social meaning and representation in the stories.

Regarding the first question, place, space and movement hold pivotal roles in the construction of the stories themselves. Most narratives consist of a "there and back again" format that takes place over the course of the night. Participants engage in this liminal space between earthquakes and between daylight by leaving their homes for open spaces, only to return to them near dawn. This movement, demarcated by verbs related to displacement, deictic markers of space and nouns denoting place, serves as the footpath on which the stories develop.



While time markers are certainly important in these narratives, they are intertwined with place, such that the two cannot be separated. In this case, space is just as important as time (Schiffrin, 2009), such as the ways in which open spaces and areas around mosques serve as points of assembly in villages. That open spaces were chosen show the judgement that earthquakes can cause destruction by falling debris and buildings. That the mosques were places that gathered villagers reveals the extent to which Islam and faith are central in helping people cope with liminality during this natural disaster.

Bakhtin (1981) discusses how with chronotope “temporal and special determinations are inseparable from one another, and always colored by emotions and values” (p. 243). This former argument proves true in these stories, as their appreciation is limited when considered outside of the context of time and space. But the latter statement is also seen in these narratives, as addressed in Question 2 concerning evaluation via judgement and affect. For example, movement in the stories is described as happening in mass, not on a scale of individuals in their houses, but entire villages, even all of Mayotte. This amplification of scale also portrays a judgement where the reaction during the crisis was shared and not just an isolated incident of a worried narrator. Narrators speak from an evaluative standpoint that at that time, the events were so upsetting that people reacted in surprising ways, such as taking mattresses to sleep in town squares in the middle of the night.

The scale on which individuals gather together suggests that these moments of crisis elicit reactions related to togetherness rather than division. This judgement serves as insight into how individuals represent their communities during such times. In addition, affect is also present throughout the stories. Two contrasting emotional reactions are seen, the first of which is directly present with language related to fear, shock, and suffering, such as people crying and expressing concerns about death. The stories also show affect and judgement related to unity, helping out, faith, and the overall desire to pass the liminal moment together, as a group. Use of language related to emotion evaluate the (re) actions in the stories and emphasize their vividness as experienced during an earthquake swarm.

The narratives become a means to understand how a particular group of individuals represent the experiences of many during a moment of uncertainty. This liminality is scalar, from the moment between earthquakes, to the time between daylight and/or daily prayers, to a longer time period between social unrest and religious reflection. With liminality taken into consideration, the threshold chronotope can be effectively used when space is considered, just as Bakhtin (1986) does for Dostoyevsky’s use of the public and private spaces during the protagonist’s crises in *Crime and Punishment*. It allows for analysis not only of time and space, but also of how the actions and reactions of individuals in the stories relate to traumatic events or moments where a decision must be taken. For the earthquake narratives, this chronotope allows for a particular understanding of inhabitants’ (re)actions during a moment that was unprecedented, shocking, and disturbing. This in hopes of gaining insight into how past experiences and beliefs influence the (re)actions and what can be said about normativity (De Fina, 2019).

Analyzing how these events are portrayed on the small scale of short stories can help attempts to understand how people respond to natural disasters. Earthquakes remain a threat for Mayotte. Risk management and disaster protocols concerning seismic activity need improvement on the island and local and national organizations are seeking effective ways to communicate risk prevention on the island (Fallou et al., 2020). Raising awareness is a complex task that involves many actors. As the narrative analysis showed, faith factored into reactions to the crisis, an aspect which proves to be complex if not important for understanding disaster management (Chester et al., 2019). One non-negligent part of such reactions is the use of space in society in response to crises. The use of open, public spaces and areas around mosques in the villages to engage in communal activities suggest the importance of studying use of space, such as has been seen with its use over time in bereavement (Maddrell, 2016). The narrative analyses allowed for insight into how

space is engaged and evaluated in a specific moment of uncertainty and how liminality and chronotope can be useful in linguistic analyses (Baynham, 2015; De Fina, 2019).

## End notes

1. The goal of this study is not to look at translanguaging practices (Wei, 2018) nor compare the narratives across languages, though that is an interesting angle, as Pavlenko (2014) has shown that emotions and evaluation surrounding events may be expressed differently depending on language.

## Transcription conventions

**Bold** language referring to space and time

Underlined evaluative language

*Italics* language referring to person

:: syllable elongation

- syllable or word truncation

... long pause

[...] omitted language

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## Declaration of competing interest

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