

People, Places and Emotions: Visually Representing Historical Context in Oral Testimonies

Annie T. Chen, Ayoung Yoon, Ryan Shaw

University of North Carolina at Chapel Hill
School of Information and Library Science
E-mail: atchen, ayyoon@email.unc.edu, ryanshaw@unc.edu

Abstract

This paper presents visualizations to facilitate users' ability to understand personal narratives in the historical and sociolinguistic context that they occurred. The visualizations focus on several elements of narrative – time, space, and emotion – to explore oral testimonies of Korean “comfort women,” women who were forced into sexual slavery by Japanese military during World War II. The visualizations were designed to enable viewers to easily spot similarities and differences in life paths among individuals and also form an integrated view of spatial, temporal and emotional aspects of narrative. By exploring the narratives through the interactive interfaces, these visualizations facilitate users' understandings of the unique identities and experiences of the comfort women, in addition to their collective and shared story. Visualizations of this kind could be integrated into a toolkit for humanities scholars to facilitate exploration and analysis of other historical narratives, and thus serve as windows to intimate aspects of the past.

Keywords: historical narratives, personal narratives, visualizations, emotion identification, comfort women

1. Introduction

As individuals travel through life, the experiences they partake in, their inner states, and their interactions with the world become unique life journeys. However, their life paths also cross, and they themselves are set in particular social ecological contexts. Thus, personal narratives can be invaluable sources for understanding individuals in the past and present, as well as acquiring a broader sense of their common experiences in different social and cultural settings through the passage of time.

Theories of narrative construction and coherence have often examined the importance and yet, difficulty, of making sense of time in narrative. Narration is distinguished by ordering and sequence; narrators create plots from disordered chronological experience (Cronon, 1992, p.1349). Personal narratives link temporal properties to spatial ones; “they look back on and recount lives that are located in particular times and places... the narratives themselves are produced in particular times and places” (Laslett, 1999, p. 392). Space and time are also key dimensions along which we construct our understanding of narratives (Zwaan, 1999).

While space and time structure our personal narratives, emotions give them meaning. As Jones (2005) writes, “Life is inherently spatial, and inherently emotional... Each spatialized, felt, moment or sequence of the now-being-laid-down is ... mapped into our bodies and minds to become a vast store of past geographies which shape who we are and the ongoing process of life” (p. 205-206). Without these emotions there is perhaps a question as to whether the traces of our experience would continue to linger with us: “There is also inevitably in each memory the expression of emotion; it is almost as if these memories could not exist if there had not been strong emotion felt and then expressed in the face, body, or gut” (Singer & Salovey, 1993. p. ix).

These emotional attachments are what distinguish

personal narratives from simple chronologies of life events. The narrator plays a critical role in the shaping of narrative: “With narratives, people strive to configure space and time, deploy cohesive devices, reveal identity of actors and relatedness of actions across scenes. They create themes, plots, and drama. In doing so, narrators make sense of themselves, social situation, and history” (Bamberg & McCabe, 1998: □). Personal narratives and the emotions that are reflected within them “serve as a window to identity” (Horrocks & Callan, 2006). Thus, through narrative, readers can come to see how individuals make sense of themselves and their world.

However, in perusing narrative, it is not always easy for readers to make meaning of what they read. This difficulty may arise from a variety of factors such as space and time discontinuities and the inherent diversity of stories and life experiences. It is with regard to these difficulties that text mining and visualization methods may be of assistance.

This paper proposes a number of visualizations to facilitate users' ability to understand personal narratives in the historical and sociolinguistic context that events unfolded. The visualizations focus on several elements of narrative – time, space, and emotion – to explore a particular corpus: oral testimonies of Korean “comfort women,” women who were forced into sexual slavery by Japanese military during World War II. The methods also leverage shared resources that are often used in text mining, emotion detection and sentiment analysis.

1.1 Personal Narratives in Historical Context: Oral Testimonies of Korean “Comfort Women”

The Japanese military sexual slavery system, or the “comfort women” system, was in operation from 1932 to 1945, during the period of the Manchurian and Pacific wars (for more detail, see Yoshiaki, 2000; Stetz & Oh, 2001; Chung, 1997). The exact number of women who were drafted into the sexual slavery system is still controversial, but it is generally estimated at 200,000 or

more. The wide mobilization of military sex slaves was in the context of mobilizing human resources from occupied territories as part of the war effort. The majority of them were Korean, aged 14-19, from the rural lower classes (Chung, 1997), but women from China, Taiwan, and the Philippines were also forced to serve as “comfort women.”

Due to various complexities including the power relationship in East Asia, diplomatic relations between Korea and Japan, and efforts by the Japanese government to keep the military sexual slavery system secret, the existence of “comfort women” was not revealed until 50 years after the war ended. In addition, as the experience was a “shameful” part of an individual’s personal past, the victims were reluctant to identify themselves or to be formally identified as “comfort women” (Chung, 1997). While feminists, human rights activists, and historians have worked to raise public awareness of this chapter of history, the individual stories of “comfort women” are neither part of the official national histories of the countries involved, nor exist as part of their collective memories.

As the testimonies of the comfort women include experiences, perceptions, and emotions, testimonies can be seen as one form of personal narrative, trauma narratives, in a historical context. However, they are also different from personal narratives, as they are known to often contain more political tendencies, engagements of readers’ sympathy, and more possibilities of intentional narrator intervention (Stephen, 1994; Beverley, 1991; Kaplan, 1991; Sommer, 1988).

The “comfort women” narratives are similar to other personal narratives in that they may be fragmented, and that they may also have factual errors, omissions, and contradictions. At the same time, their narratives are surprisingly detailed, including the names of ships that transported them from place to place, the names of their companions, and the names of the small towns by which they passed – their memories particularly vivid, persistent, and somatic, as has often been observed with trauma narratives (Misztal, 2003). In addition, extreme events connected their experiences to certain emotions, which reflect how they see and understand those experiences and actions.

1.2 Techniques for Mining People, Places and Emotion

Text mining techniques have previously been used for extracting information about historical events and displaying them using maps and timelines (e.g. HiTiME, Yamamoto et al., 2011). The Historical Timeline Mining and Extraction (HiTime) Project has developed a text analysis system for the recognition and extraction of historical events and facts from primary and secondary historical sources such as biographies, brochures, letters and old newspaper articles (<http://ilk.uvt.nl/hitime/>). ThemeRiver employs a river metaphor to depict changes in thematic variations over time in a large document

collection (Havre, Hetzler, & Nowell, 2000).

There has also been substantial research on automated methods for identifying emotional expression in narrative. Many studies employed the Linguistic Inquiry and Word Count software, which provides statistics on the presence of words representing emotional and cognitive processes, as well as various linguistic patterns (Pennebaker & Francis, 1996) (e.g. Bantum & Owen, 2009; Liess et al., 2008). SentiProfiler incorporates Wordnet-Affect to support the visual examination of sentiment in Gothic literature (Kakkonen & Kakkonen, 2011). Plaisant et al. (2006) demonstrated how text mining and visualization could be used to explore erotics in a corpus of letters between Emily Dickinson and her sister-in-law. Pennebaker and Gonzales (2009) illustrated how linguistic patterns in blog posts might comprise historical memories and reflect the social dynamics of traumatic events.

Considering the literature, it becomes apparent that though there has been previous work in highlighting temporal, spatial and emotional aspects of narrative, extant systems do not readily support the visual integration of these three elements of narrative. However, it is also evident that these elements are inextricably intertwined, both in experience and memory. Tools that facilitate visual synthesis of these aspects of historical narrative could be of invaluable assistance to scholars. Thus, the aim of this paper is to propose methods for textual analysis in the spirit of casting light upon the historical and sociolinguistic context of the narratives, as well as the life course of the individuals whose stories are being told.

2. Methodology

The narratives employed in this analysis were compiled from two anthologies of translated interview content, compiled by the Korean Council for the Women Drafted for Military Sexual Slavery by Japan and Korea Chongshindea’s Institute (Howard, 1995; Schellstede & Yu, 2000). To render the content to digital format, the content was scanned and visually inspected to correct any errors. Person and place names were identified using the Stanford Named Entity Recognizer (Finkel, Grenager, & Manning, 2005).

Emotional content was identified using a lexicon that was constructed based on Wordnet-Affect (Strapparava & Valitutti, 2004). In order to understand more about what the women in the testimonies thought and how they viewed themselves, two categories were added: Cognition and Self-reflexivity. Sentences were identified as involving cognitive processes if at least one of the following words appeared in any tense: feel, think, believe, and wonder. Sentences were labeled self-reflexive if there was reference to “myself” within the sentence. The selection of these words was partially guided by Raskovsky, Slezak, Wasser, and Cecchi’s (2010) study of introspection in texts, and by the authors’ own reading of the narratives. Following the extractions,

visualizations were generated using PHP scripts.

3. Visualizing Personal Narratives

3.1 Juxtaposition of Life Paths

The purpose of the first visualization is to assist the viewer to examine the life courses of individuals as compared to others (Fig. 1). Each row represents the life course of one woman, and the constituent elements are places that she mentions in her testimony. The places appear in order of appearance in the text. The paths are aligned based on the places selected by the viewer. In Figure 1, the focal point of “Shinuiju” is selected. This visualization enables the user to identify and peruse testimonies that share commonalities.

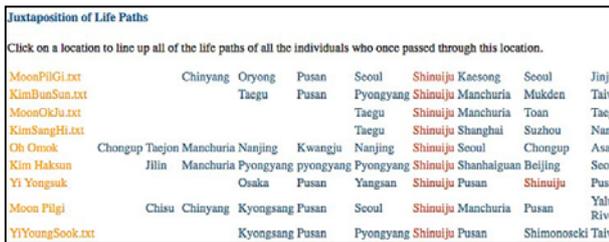


Figure 1: Juxtaposition of Life Paths

Some of the challenges in modeling these paths were differing levels of granularity in place names, as well as the lack of place names. In some cases, the names of the places that women were located were never mentioned, perhaps because they were unclear about where they were taken.

Given that many of the places that the comfort women stayed over the course of their lives may be unfamiliar to the reader, and that they traveled from place to place so often that it would be difficult to grasp even for those who are familiar, a map representation was generated using Google Maps API V.3. This representation allows the reader to see the paths taken by the women throughout the narrative (Fig. 2).



Figure 2: Spatial Depiction of a Life Path

3.2 People, Places and Emotion

As the literature review demonstrated, the experience of being is inherently spatial, temporal and emotional. Thus, this visualization was conceived to facilitate user exploration of this multidimensional landscape. Scanning the interface below from left to right, one can quickly acquire an overview of the affective content of the text, as well as significant people

and places (Fig. 3). As the user hovers over the circles, the sentences that contain affective content are displayed in an info-bubble.

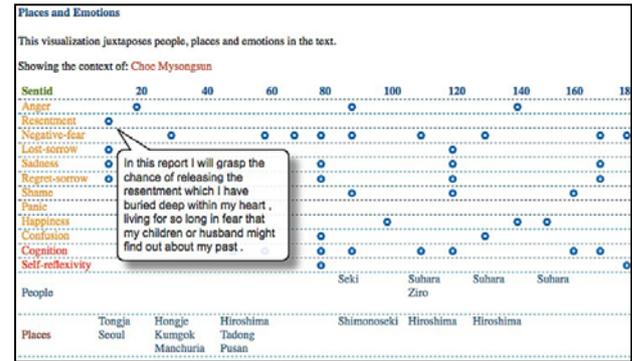


Figure 3: People, Places and Emotions

4. Discussion

4.1 Contextualizing Experiences Lived

As Cronon (1991) writes, “to recover narratives people tell themselves about the meanings of their lives is to learn a great deal about their past actions and about the way they understand those actions” (p. 1369). The visualizations presented in this paper can facilitate users’ exploration of narratives; assist them to make connections between temporal, spatial, emotional and cognitive elements; and help them to understand the comfort women as individuals, as well as in terms of their collective experience.

It goes without saying that there are similarities in their experiences. As the visualizations show, many of those who later became comfort women were taken to Shimonoseki, where the women were dropped off before being assigned to other locations. It is also possible to quickly see that fear is by far the most common emotion felt by the women, not surprising given their experience. However, the consistent presence of other emotions such as sadness, regret, anger and hopelessness also contextualize their experiences.

Aside from discovering similarities, the visualizations can assist the reader in other ways as well. For instance, if one flips through the People, Places and Emotions visualization (Fig. 3) for several women, one might notice that sadness and regret are present at the end of many narratives, particularly those generated from Howard (1995). Through this, we can perhaps see the work of the editor to end each testimony with the parting thought from the focus individual regarding their past, their desires for reparations or apologies, and so on.

Examining the sentences that appear as one hovers over Sadness and Regret at the ends of the narratives, the reader may realize that though there are similarities in the women’s attitudes, their different attitudes also shine through: “It was bad enough that I had to suffer what I did. I am bitter when I think of this, but I am not going to

blame others any longer”¹ (Yi Yongsuk), “Of course Japan is to blame, but I resent the Koreans who were their instruments even more than the Japanese they worked for” (Kim Tokchin), and “Who would be able to guess what inner agony I suffer in my heart?” (Choe Myongsun). In the words of Kim Haksun, “Once I am dead and gone, I wonder whether the Korean and Japanese governments will pay any attention to the miserable life of a woman like me.”

By highlighting the women’s thoughts and references to themselves, the Cognition and Self-Reflexivity categories provide yet another view of the individual characters of the women. For example, the People, Places and Emotions visualization enables users to follow Kang Tokkyong through the narrative, experiencing her abandonment with her as she finds herself alone in a truck, and then witnessing her defiant spirit with utterances such as these: “If such a thing happened now, I would kill myself by biting my tongue off,” and “I tried to throw myself off of the ship as we crossed the sea to Korea, but this woman sensed what was going on and followed me everywhere, making it impossible for me to take my own life.”

As the above utterances demonstrate, though the women featured in these testimonies share similarities of experience, there also aspects of their experiences and their reactions to them that are different. In principle, simply by moving one’s mouse over the People, Places and Emotions visualization for each woman, the user can acquire a taste of these differences, and then click into the testimonies for a deep perusal.

This visualization is meant to support Wertsch’s distributed approach to collective remembering, in which, though collective memory is inherently social, there is not “a single system of uniform knowledge and belief,” but rather, a need for “collaboration between those focusing on individual remembering and those concerned with collective phenomena” (Wertsch, 2009, p. 132). It may also stem the tide that Greene (2004) has observed of the focus of memory studies shifting away from individual remembering.

4.2 Implications for Shared Resources and Future Work

The visualizations discussed in this paper potentially contribute to the dialogue on shared resources in various ways. First, this study employed extant resources for the mining and visualization of a particular type of narrative, and therefore serves as an example of the applicability of these tools to this type of narrative. In the case of emotions, there were a significant number of false positives due to words in the lexicon that could take on different meanings. Future work could integrate a mechanism for word sense disambiguation or a machine learning approach to emotion identification.

¹ This excerpt and all following excerpts are from Howard (1995).

The visualizations in this paper primarily facilitated user exploration of the nexus of time, space and emotion. Various other aspects of narrative might be visualized in a similar fashion. For example, topic modeling techniques might be used to extract common themes and motifs from the narratives, and then the motifs could be juxtaposed with the other elements of time, space and emotion. Other aspects of the narrative such as active/passive voice, frequency of pronouns, etc., might also be integrated to provide additional methods of exploring context and mood.

In addition, the testimonies visualized in this paper were obtained from translated interview content. The techniques used in the visualizations might be applied to content in other languages, such as Korean and Chinese. An interface facilitating comparisons of testimonies in multiple languages might enable researchers to explore differences in representation due to translation, editorial style, linguistic structure and culture.

The techniques used in these visualizations could also be applied to other narratives. Historical testimonies serve as a memory of the experiences of particular groups, such as Holocaust survivors², Iraqi refugees³, and survivors from other genocides⁴. As “the notion of testimony expresses urgency, a story that must be told because of the struggles it represents” (Stephen, 1994, p. 224), testimonies have increasingly gained attention from various fields as windows to unknown or little-known “truths,” and to promote social justice. Visually representing individuals’ life traces could be a way of representing collective experiences involving marginalization, repression, and oppression, thus granting access to intimate aspects of the past.

5. Conclusion

This paper sought to design visualizations that would be helpful for analyzing historical narrative. These visualizations enable viewers to easily see the sequence of places for any one individual, spot similarities and differences in their life paths, and form an integrated view of spatial, temporal and emotional aspects of narrative. These types of visualizations could be integrated into a toolkit for humanities scholars to assist them in exploring and analyzing narratives.

6. Acknowledgements

This work was partially supported by National Science Foundation grant IIS 0812363.

² United Holocaust Memorial Museum:

<http://www.ushmm.org/research/collections/resourcecenter/testimony/>; USC Shoah Foundation Institute: <http://tc.usc.edu/vhite/%28S%28r0cji5mclbl3nv551z4w0lj3%29%29/default.aspx>

³ Refugee Council USA:

<http://www.rcusa.org/index.php?page=congressional-hearings>

⁴ The Holocaust Memorial Day Trust:

<http://hmd.org.uk/resources/survivor-stories>

7. References

- Bamberg, M., & McCabe, A. (1998). Editorial. *Narrative Inquiry*, 8(1), pp. iii--v.
- Bantum, E. O., & Owen, J. E. (2009). Evaluating the validity of computerized content analysis programs for identification of emotional expression in cancer narratives. *Psychological Assessment*, 21(1), pp. 79--88.
- Beverly, J. (1991). The margin at the center: On testimonio (Testimonial Narratives), In Smith, S. and Watson, J. (Eds.). *De-colonizing The Subject*. Minneapolis: University of Minnesota Press.
- Cronon, W. (1992). A place for stories: Nature, history, and narrative. *Journal of American History*, 78(4), pp. 1347--1376.
- Chung, C. S. (1997). The Origin and Development of the Military Sexual Slavery Problem in Imperial Japan. *Positions*, 5(1), pp. 219--255.
- Finkel, J. R., Grenager, T., & Manning, C. (2005). Incorporating non-local information into information extraction systems by Gibbs Sampling. In *Proceedings of the 43rd Annual Meeting of the Association for Computational Linguistics (ACL 2005)*, pp. 363--370.
- Greene, A. (2004). Individual remembering and 'collective memory': Theoretical presuppositions and contemporary debates. *Oral History*, 32(2), pp. 35--44.
- Havre, S., Hetzler, B., & Nowell, L. (2000). ThemeRiver: Visualizing theme changes over time. Paper presented at the *Information Visualization, 2000. InfoVis 2000. IEEE Symposium on*, pp. 115--123.
- Horrocks, A. & Callahan, J. (2006). The role of emotion and narrative in the reciprocal construction of identity. *Human Resource Development International*, 9(1), pp. 69--83.
- Howard, K. (Ed.) (1995). *True Stories of the Korean Comfort Women*. Y. J. Lee (Trans.). London: Cassell.
- Jones, O. (2005). An ecology of emotion, memory, self and landscape. In Davidson, J., Smith, M., & Bondi, L. (Eds.), *Emotional Geographies*. Hampshire, England: Ashgate Publishing Limited, pp. 205--218.
- Kakkonen, T., & Kakkonen, G. G. (2011). SentiProfiler: Creating comparable visual profiles of sentimental content in texts. In *Proceedings of Language Technologies for Digital Humanities and Cultural Heritage Workshop*, pp. 62--69.
- Kaplan, C. (1991). Resisting autobiography: Out-law genres and the transitional feminist subject. In Smith, S. and Watson, J. (Eds.). *De-colonizing The Subject*. Minneapolis: University of Minnesota Press.
- Laslett, B. (1999). Personal narratives as sociology. *Contemporary Sociology*, 28, pp. 391--401.
- Liess, A., Simon, W., Yutsis, M., Owen, J. E., Piemme, K. A., Golant, M., & Giese-Davis, J. (2008). Detecting emotional expression in face-to-face and online breast cancer support groups. *Journal of Consulting and Clinical Psychology*, 76(3), pp. 517--523.
- Misztal, B. A. (2003). Chapter 6: Studying memory. In *Theories of Social Remembering*. Maidenhead: Open University Press, p. 142.
- Pennebaker, J. W., & Francis, M. E. (1996). Cognitive, emotional, and language processes in disclosure. *Cognition & Emotion*, 10(6), pp. 601--626.
- Pennebaker, J. W. & Gonzales, A. (2009). Making history: Social and psychological processes underlying collective memory. In Boyer, P., & Wertsch, J. V., *Memory in Mind and Culture*. Cambridge: Cambridge University Press, pp. 171--193.
- Plaisant, C., Rose, J., Yu, B., Auvil, L., Kirschenbaum, M. G., Smith, M. N., Clement, T., & Lord, G. (2006). Exploring erotics in Emily Dickinson's correspondence with text mining and visual interfaces. *JCDL '06*, pp. 141--150.
- Raskovsky, I., Slezak, D. F., Wasser, C. D., & Cecchi, G. (2010). The emergence of the modern concept of introspection: A quantitative linguistic analysis. *NAACL Young Investigators Workshop 2010*.
- Schellstede, S. C., & Yu, S. M. (Eds.). (2000). *Comfort Women Speak: Testimony by Sex Slaves of the Japanese Military: Includes New United Nations Human Rights Report*. New York: Holmes & Meier.
- Singer, J. A. & Salovey, P. (1993). *The Remembered Self: Emotion and Memory in Personality*. New York: Free Press.
- Sommer, D. (1988). 'Not Just a Personal Story': Women's testimonios and the plural self. In Brodzki, B., & Schenck, C. (Eds.), *Life/Lines: Theorizing Women's Autobiography*. Ithaca: Cornell University Press, pp. 170--130.
- Stephen, L. (1994). *Hear My Testimony: Maria Teresa Tula, Human Rights Activist of El Salvador*. Boston: South End Press.
- Stetz, M. & Oh, B.C. (Eds.). (2001). *Legacies of the Comfort Women of World War II*. London: M. E. Sharp.
- Strapparava, C., & Valitutti, A. (2004). Wordnet-affect: An affective extension of wordnet. In *Proceedings of the 4th International Conference on Language Resources and Evaluation (LREC 2004)*, pp. 1083--1086.
- Wertsch, J. V. (2009). Collective memory. In Boyer, P., & Wertsch, J. V., *Memory in Mind and Culture*. Cambridge: Cambridge University Press, pp. 117--137.
- Yoshiaki, Y. (2000). *Comfort Women*. New York: Columbia University Press.
- Yamamoto, M., Takahashi, Y., Iwasaki, H., Oyama, S., Ohshima, H., & Tanaka, K. (2011). Extraction and geographical navigation of important historical events in the Web. In K. Tanaka, P. Fröhlich, and K. S. Kim (Eds.). *W2GIS 2011, LNCS 6574*, pp. 21--35.
- Zwaan, R. A. (1999). Five dimensions of narrative comprehension: The Event-Indexing Model. In Goldman, S. R., Graesser, A. C., Broek, P. V. D., (Eds.). *Narrative Comprehension, Causality and Coherence: Essays in Honor of Tom Trabasso*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., pp. 93--110.