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Chapter 10

Dynamic Co-Evolutions of Peace Frames in the United States, Mainland China, and Hong Kong: A Semantic Network Analysis

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ABSTRACT

This chapter employs semantic network analysis to investigate the online database LexisNexis to study the dynamic co-evolutions of peace frames embedded in the news coverage from the Associated Press (AP--United States), Xinhua News Agency (XH--Mainland China), and South China Morning Post (SCMP—Hong Kong). From 1995 to 2014, while the war and harmony frames were relatively stable in AP and XH respectively, there was a trend toward convergence of the use of war frames between AP and XH. The convergence of semantic networks of coverage of peace in AP and XH may have left more room for SCMP to develop a unique peace frame, and the divergence of semantic networks of coverage of peace in AP and XH may lead SCMP to develop strategies of balancing the frames employed by AP and XH, thus creating a hybrid peace frame.

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INTRODUCTION

The concept of global peace culture has been developed to achieve a more humane world and enhance human well-being. Global peace culture examines different societies as they develop diverse cultural arrangements to solve the problem of how people can get along with one another and cope with environmental challenges. Although progressing toward the ultimate goal of a peaceful global culture is essential to the existence of human beings and the sustainable and healthy development of human society, it is not easy to promote a general culture of peace in different societies that have unique cultural backgrounds and civilizations. “Cultural realism” (Henderson & Tucker, 2001, p. 318) suggests that different nations portray the culture of peace differently. One way to explore these differences is to examine how the news texts portraying peace produced by media outlets situated in different cultural and media systems embody different words related to peace. Demonstrating such a difference calls upon framing formulations of news texts, especially the one that focuses on the cultural dimensions of framing, as its theoretical background (Jiang & Barnett, 2014). Moreover, at the macro level, since the world media have provided arenas for various nations and cultural groups to negotiate the dominant world culture, the longitudinal cross-cultural comparison of news coverage of peace from different international news agencies presents a good case study to examine not only the dynamics of peace frames embedded in news, but also the negotiation of world peace culture among different nations.

Semantic network analysis describes a wide variety of “computer supported solutions” that enable scholars to “extract networks of concepts” from texts and discern represented meanings (Diesner & Carley, 2005, p. 83). Based on a literature review of cultural frames of news, related framing dynamics at the international level, and the peace culture in the United States, Mainland China and Hong Kong, this chapter presents the results of a computer-assisted semantic network analysis examining how different cultures shape international peace news in the United States, Mainland China, and Hong Kong, and how the peace frames in these nations and regions have co-evolved from 1995 to 2014 through (a) the analysis of salience of semantic concepts through their network centralities and frequency of concept associations, (b) concept cluster analysis, and (c) correlation analysis of semantic networks.

Literature Review

- **Culture and News Framing in an International Context:** News reporting can be conceived of as a set of structured interpretive packages giving meaning to news events (Gamson & Modigliani, 1989). Each package is composed of various associated symbols. Certain packages have a natural advantage since their ideas and languages resonate with larger cultural themes and narratives that are part of the majority of a group’s cultural heritage (Gamson & Modigliani, 1989) and (Snow & Benford, 1988). The potency of frames to influence the receivers lies in the fact that they are closely tied with the public’s cultural assumptions (Van Gorp, 2007). Therefore, culture, which refers to the collective pattern of thoughts “distinguishing the member of one group or category of people from another” (Hofstede, 1984, p. 260), might be manifested as the stock of “common frames exhibited in the discourse and thought of most people in a social grouping” (Entman, 1993, p. 53). At the national level, despite the similarities (and dissimilarities) of mass media institutions across societies, media production is a reflection of national interests (McQuail, 1994), and the media have to maintain a culturally specific orientation in their coverage to reach the local audience (Gurevitch, Levy, & Roeh, 1991).

- **Framing Dynamics, Discursive Struggles, and Cultural Hybridization:** Cultural systems have logics and dynamics of their own (Gamson & Modigliani, 1989). The media systems in different nations are embedded in different national cultural contexts. The domestication of international news (Cohen, 1996) and (Gans, 1979) has created a site of discursive struggle in the expression of preferred values and orders at the global level (Lee, Chan, Pan, & So, 2000), in which different elements of cultural systems ebb and flow in prominence to accommodate different situations and topics at different times. From this perspective, the dynamics of the framing process lie in a series of arenas in which symbolic competitions are carried out among social actors who compete in sponsoring their preferred frames. At the macro level, various national cultural groups and ideologies negotiate the definition of social reality and the world culture in the arena provided by the global media. The discursive struggles at the global level also have resulted in the creation of hybrid cultures and complexes on the local level. There are a variety of interpenetrations and interactions among cultures over time, the outcomes of which can be seen as the combination of hybridization in each individual case (Straubhaar, 2013). In spite of this dynamism, examinations of media frames extant in the research literature have mainly adopted a static viewpoint (Li, 2007). Few studies have touched on frame dynamics in media coverage, and most that have done so have taken a micro-level approach. Macro-societal effects on the dynamics of media frames have been neglected. For example, Chyi and McCombs (2004) argued that for the purpose of keeping the story fresh, the media emphasize different angles of an event over time. However, these studies ignore the ways in which frames construct particular meanings and culture's connection with frames.
- **Semantic Network Analysis of News Frames and Framing Dynamics:** News frames are manifest in media content in many ways, such as word choice, metaphors, exemplars, descriptions, arguments, visual effects, accompanying headlines, tone of presentation, placement, and amount of exposure of certain words (Gamson & Lasch, 1983), (Myers, Klak, & Koehl, 1996), and (Pan & Kosicki, 1993). However, many scholars have reduced media frames to story topics or themes (Powers & Andsager, 1999) and (Rhee, 1997), and drawn conclusions about the dominant meanings of the media content by summing all messages they judge as positive or negative (Entman, 1993). Rooted in the cognitive paradigm (D'Angelo, 2002) and the tradition of frame semantics in linguistics (e.g. Fillmore, 1982), scholars have argued that words are hierarchically clustered in memory (Collins & Quillian, 1972), and thus spatial models that illustrate the relations among words are representative of meaning (Barnett & Woelfel, 1988). Therefore, semantic network analysis (SNA) is a form of content analysis that identifies the network of associations between concepts expressed in a text (Carley & Palmquist, 1992) and (Doerfel, 1998). SNA first focuses on analyzing the salience of the concepts. Entman (1993) stated that frames are "manifested by the presence or absence of certain key words" (p. 52). From this perspective, frames draw attention to some aspects of reality while omitting others through language. On the one hand, the media text can make a piece of information more salient through repetition or putting it in a salient position in the semantic structure of the media content; on the other hand, it also can "make bits of information more salient by associating them with culturally familiar symbols" (Entman, 1993, p. 53). The salience of the concept can be measured through the analysis of concept centrality, which reflects the location and the importance of a concept in relation with other concepts in the network (Kwon, Barnett, & Chen, 2009), (Freeman, 1979), and (Wasserman & Faust, 1994). Since the meaning of a concept depends on its surrounding context, SNA also focuses on exam-

ining concept associations by looking at the frequency with which concepts co-occur or appear in close proximity. In addition, through the analysis of semantic networks at different times, the dynamic evolution and co-evolution of media's reporting on a topic can be examined. By conducting a semantic network analysis, this chapter examines the differences in the news frames of peace among the United States, Mainland China, and Hong Kong, and assumes the culture of peace in each country and region is an important factor contributing to any such differences. This chapter also investigates the dynamics of the framing process at the macro level by analyzing how the news agency in the United States, Mainland China, and Hong Kong compete in sponsoring their preferred peace frames.

- **Culture of Peace in the United States:** American values and beliefs were inherited from European ancestors in part and reshaped by the experience of conquering the North American continent (Lewis, 2014). Within its 240 years' history, the United States has been involved in many types of war, such as international wars, civil wars, and criminal gang wars. However, warfare weakens the quality of democratic values, which are the most central ideas of the American political culture since the founding of the United States (Miroff, Seideman, Swanstrom, & Luca, 2009). In addition, the affluence of modern America is diametrically opposed to conditions on the battlefield. Specifically, "the culture of wealth, which emphasizes selfishness, is diametrically opposed to the culture of soldiers, which requires selflessness" (Lewis, 2014, p. 33). However, in the age of consumerism, for the United States, the pursuit of domestic freedom and happiness relies more and more on the imported goods, energy, and credit at the international level. In order to satisfy the desires of the American people, the U.S. government pursues imperial ambitions abroad with the use of military force to exploit the resources of other nations. Moreover, according to Lewis (2014), Americans believe that the "U.S. is a force for good" (Lewis, 2014, p. 38). They believe the exceptional power and position of the United States in the world can transform other nations and regions to look like America, accepting American culture and values, through political policies, economic means, and if necessary, the use of warfare. This "culture of war" has dominated U.S. domestic and foreign policies, and made it a global leader for peace and democracy (Marsella, 2011). According to Marsella (2011, p. 714), "a culture of war is an interlocking system of national meanings, beliefs, behaviors, institutions, and identities that consider violence and war necessary and justifiable in the pursuit of U.S. hegemonic global interests." In describing the evolution of empire in the United States, Johnson (2004, p.5) writes, "the United States prefers to deal with nations through the use of or threat of force rather than negotiations, commerce, or cultural interactions and through military-to-military, not civilian-to-civilian relations." War has become the way the United States pursues its self-interest, resolves conflict, and survives in a fiercely competitive environment. (Johnson, 2004). America's conventional military supremacy has been challenged by the U.S. defeat in Vietnam, setbacks in Lebanon and Somalia, and political and military difficulties in Afghanistan and Iraq (Record, 2006). The consequences of war have reduced the U.S.'s moral authority, political stability, and economic viability. However, U.S. citizens have been socialized to believe that there will never be an end to war (Bacevich, 2005), (Bromwich, 2010), and (Jamail & Coppola, 2009). Bacevich (2005) argues that the U.S. is now seduced by the militarism and a glorification of the very idea that military might itself insures power.

- **Culture of Peace in China:** Similar to the United States, the Chinese state system was created from many wars in the Warring States Period (463-222 BC). During the Warring States Period, “ancient China witnessed considerable evolution in the nature of war, the composition of military forces, and the conduct of battle” (Lynn, 2004, P. 34). Warfare brought about great suffering to the Ancient Chinese both materially and spiritually. According to Feng (2007), on the one hand, the Warring States Period produced a large body of precious military literature with Sun Zi’s *Art of War* the best known. On the other hand, the period also brought about the blossom of the “hundred schools of thought,” among which Confucianism and Legalism were the major schools, debating how to avoid endless warfare and improve ruling strategy and human life. Although the Qin State successfully unified China through Legalistic reformation, Confucianism finally won out in the philosophical struggles among different schools, and became the dominating national philosophy in the institutional and spiritual frameworks of China from the Han Dynasty. According to Feng (2007, p. 19), Confucianism provides the most essential elements in Chinese military thought and Chinese conduct of international relations. A ruler with high moral standards will be able to maintain harmony in family, stability in a kingdom, and peace in the world at large. The Confucian, Sino-centric concept of morality and ethics, which dictated both domestic and international policies, maintained that through good government and internal peace and prosperity China would play a leadership role in the world and serve as a universal paradigm for other nations. In Chinese philosophy, harmony is regarded as the great root from which grows all the human actions in the world, and is the universal path that human beings should pursue. Along with Confucianism, China’s foreign policy has been characterized by a high degree of moralism (Cao, 2001), (Chan, 1999), (Hsu, 1991), and (Shih, 1993), which advocates using soft power to win the hearts of the people and emphasizes cultural influence over military conquest. From the beginning of the 21st century, starting with the Hu-Wen leadership, the harmony-based Confucian rhetoric has been reiterated to project a pacifist cultural image of China (Cao, 2007). The culture of harmony has been encapsulated in the speeches given by Chinese leaders widely reported in the Communist Party press, which focused on using the Confucian concept of harmony as a key approach to the peaceful development of China and the solution of the international conflict. For example, Chinese President Xi Jinping delivered the only public policy speech of his U.S. visit during a dinner co-hosted by the National Committee on U.S.-China Relations on September 22, 2015, to promote the harmony based Confucian tradition. Xi (2015) claimed, “China will keep to the path of peaceful development. China’s defense policy is defensive in nature and its military strategy features active defense.” Based on the above arguments, this chapter predicts that when reporting on peace, U.S. news agencies will employ offensive frames related to war and violence, and news agencies in China will pay more attention to the defensive frames of harmony.
- **Hybrid News Frames of Peace in Hong Kong:** Hong Kong has gained a reputation as a gateway to China for overseas investment and businesses since its return to Mainland China in 1997. It plays a role of a bridge between the United States and China (Leung, Bush, & Paal, 2010). On the one hand, the development of Hong Kong is crucial to U.S.-China economic relations, on the other hand, the interaction between the Western and Chinese culture propelled and stimulated the development of Hong Kong. The unique culture of Hong Kong has been created in the process of the culture convergence between Western and Chinese cultures. It reflects how Chinese culture co-evolves with Western cultures, especially the cultures of Great Britain and the United States,

creating a new hybrid culture. Although the integration of Hong Kong into the Chinese economy has been deepened by the construction of high-speed trains, as well as Hong Kong's growing dependence of China for labor, water, and electricity supplies, the Chinese government offers a high degree of autonomy for Hong Kong, allowing it to maintain its solid legal and judicial systems, while exercising political rights, such as freedom of expression. This maximizes Hong Kong's capability of acting as a channel between China and the outside world and attracting nations, such as the United States to use it as a portal to transfer expertise and services to China. This chapter assumes that the news frames of peace in Hong Kong is a reflection of the hybrid frames of peace integrated elements of the American and Chinese cultures of peace, and examines the dynamic co-evolutions of the news frames of peace between Hong Kong, China, and the United States.

Empirical Hypothesis

This chapter reports a computer assisted SNA to analyze the news converge of peace from *The Associated Press (AP)*, *Xinhua News Agency (XH)*, and *South China Morning Post (SCMP)* from 1995 to 2014. Whereas *XH* is controlled by the Chinese Communist Party and is regarded as a mouthpiece of the Chinese government in disseminating the policies of the central government (Ma, 2005), *AP* operates as an independent news corporation in a liberal media system. However, *AP* and *XH* are the leading news sources in the U.S. and China, respectively (Wu, 2006), and media outlets in the two nations rely on *AP* and *XH* feeds for content. *AP* distributes news to 1,500 U.S. newspapers (AP's History, n.d.), and most newspapers in China rely on *XH* feeds to fill their pages ("Xinhua News Agency," 2013). Thus, it is reasonable to choose them as the sources for comparison. *SCMP* is a Hong Kong English-language newspaper with a circulation of 104,000. It is perceived as one of the newspapers of record in Hong Kong (Flowerdew, David, & Tran, 2002). In the first half of the 20th century, it employed a combined reporting strategy to meet the needs of both Chinese and English readership (Zhou, 2015). Since Malaysian tycoon Robert Kuok's Kerry Media bought a controlling interest in *SCMP* in 1993, the reporting of *SCMP* has inclined towards the central government of China but has still demonstrated attitudes critical toward the Chinese government ("South China Morning Post," n.d.).

English-language news stories were selected from the LexisNexis database using the word "peace" as the search string, 1995 to 2014, as the time line, and the individual news agencies (*AP*, *XH*, and *SCMP*) as sources. *AP* yielded 46,051 articles, *XH* 74,987 articles, and *SCMP* 1,405 articles. This study first focuses on examining the semantic content and dynamic evolution of the salience of cultural concepts used in coverage of peace by *AP* and *XH*. The two research questions follow:

- **R_{1a}**: How many clusters were there in the 20-years' semantic network of coverage of peace in *AP* and *XH*?
- **R_{1b}**: What were the most central concepts in each cluster?
 - This study also predicts that when reporting on peace, concepts related to "war" and "violence" would be more salient in *AP* than in *XH*, and concepts related to "harmony" would be more salient in *XH* than in *AP*. The hypotheses follow:
- **H_{1a}**: The centralities of the concepts related to "war" and "violence" in semantic networks of coverage of the peace from *AP* will be greater than from *XH*.

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- **H_{1b}**: The centralities of the concepts related to “harmony” in semantic networks of coverage of the peace from *XH* will be greater than from *AP*.
 - This study also investigates how the cultural concepts related to “war”, “violence”, and “harmony” were associated with other concepts, suggesting the following research questions:
- **R_{1c}**: What concepts were more closely associated with the concepts related to “war” and “violence” in semantic network of coverage of peace in *AP*?
- **R_{1d}**: What concepts were more closely associated with the concepts related to “harmony” in semantic network of coverage of peace in *XH*?
 - Also, the study focuses on exploring the semantic content of coverage of peace from *SCMP*, and how it co-evolved with the content of peace coverage from *AP* and *XH*. Two research questions follow:
- **R_{2a}**: How many clusters were there in the 20-years’ semantic network of coverage of peace in *SCMP*?
- **R_{2b}**: What were the most central concepts in each cluster?
 - Finally, this study investigates the co-evolution of the semantic structure of coverage of peace from *SCMP*, *AP* and *XH*. The research questions follow:
- **R_{2c}**: What were the correlations between the semantic networks of coverage of peace in *AP* and *XH*?
- **R_{2d}**: What were the correlations between the semantic networks of coverage of peace in *AP* and *SCMP*?
- **R_{2e}**: What were the correlations between the semantic networks of coverage of peace in *XH* and *SCMP*?

Research Procedures

Step 1: The first step in the research process was the selection of words. The common principle of word selection in semantic methods is based on the frequency of word occurrence (Hunter, 2014). Specifically, after eliminating the “stop words,” which include a list of articles, prepositions, conjunctions, and transitive verbs that do not contribute to the meaning of the text (e.g., if, and, that, a, an, the, to, is, was, were) or distort the description of the text (Danowski, 1993), (Doerfel & Barnett, 1999), (Kwon et al, 2009), and (Rice & Danowski, 1993), the 100 most frequently occurring words in each year in *AP*, *XH*, and *SCMP* were selected. The analysis was restricted to 100 words to keep the analysis parsimonious and at the same time provide sufficient depth to clearly identify the similarities and differences among the semantic networks between groups and over time.

Step 2: The second step was to create semantic networks using ConText (Diesner, Aleyasen, Kim, Mishra, & Soltani, 2013). The principle of producing concept links of the semantic network is based on the measurement of concept co-occurrence. According to Miller’s (1956) argument that people’s working memory can process seven meaningful units at a time, concept pairs among the most frequent concepts that co-occurred within a window of seven concepts were identified. Specifically, among 4,000 (2 x 20 x 100) most frequent concepts in *AP* and *XH*, there were 337 unique terms. To test H_{1a-b} and answer R_{1a-d} , all concept pairs among the 337 most frequent terms within the seven concept window in each month’s converge of peace from *AP* and *XH* were found, and a concept pair was given a connection weight equally regardless of distance within the window. In this way, 480 (240

x 2) monthly semantic networks of peace in *AP* and *XH* were created. Then, 240 monthly semantic networks from *AP* and *XH* also were aggregated together, creating two semantic networks, each based on 20 years of content, one each from *AP* and *XH*. Among 2,000 (20 x 100) most frequent concepts in *SCMP* and 337 unique terms selected to answer R_7 , there were 467 unique concepts. To answer R_{2c-e} , all pairs among the 467 most frequent concepts within the seven concept window in each year's converge of peace from *SCMP*, *AP*, and *XH* were found, and all pairs were assigned equal connection weight regardless of distance. Overall, 60 (3 x 20) yearly semantic networks of coverage of peace in *SCMP*, *AP*, and *XH* were created.

The first two steps were conducted using the ConText software (Diesner et al., 2013). Since algorithms used by ConText automatically identified the semantic subject (source) and object (target) in the news content, all semantic networks generated are directional semantic networks (Corman, Brewer, Ball, Fisk, Fleischer, & Ruston, 2013). Through examining the source and target of the semantic links, scholars can identify the causal relations among different concepts to have a deeper understanding of the framing strategies and the meaning embedded in news coverage.

Step 3: The third step is to analyze the semantic networks. To test H_{1a} and H_{1b} , the weighted degree centralities of concepts related to “war”, “violence”, and “harmony” in monthly semantic networks of coverage of peace from *AP* and *XH* were measured using R packages ‘igraph’ (Csardi & Nepusz, 2006) and ‘tnet’ (Opsahl, 2009). Degree centrality indicates the total number of direct links. Among the 337 unique concepts composing the monthly semantic networks of coverage of peace in *AP* and *XH*, *war*, *weapon*, *violence*, *arm*, *army*, *soldier*, *power*, *military*, *militant*, *militia*, *troops*, *force*, *kill*, *fight*, *fighter* were identified as concepts related to “war” and “violence”; *ceasefire*, *cooperation*, *development*, *reconciliation*, *economy* were identified as concepts related to “harmony”. To answer R_{1c} and R_{1d} , this study examines concept associations in 20 years’ semantic networks of coverage of peace from *AP* and *XH* by looking at the frequency with which they co-occur within the window of seven concepts. To answer R_{1a} and R_{2a} , the modularity analysis of 20 years’ semantic networks of coverage of peace from *AP*, *XH*, and *SCMP* is conducted by using Gephi (Bastian, Heymann & Jacomy, 2009). It describes how the semantic networks are compartmentalized into sub-networks (clusters, communities, groups). R_{1b} and R_{2b} are answered by calculating the weighted in-degree and out-degree centralities of each concept in each sub-network of 20 years’ semantic networks of coverage of peace from *AP*, *XH*, and *SCMP* using Gephi. Specifically, in-degree centrality measures the number of times that a semantic object received, and out-degree centrality measures the number of ties that a semantic subject initiated. Also, Gephi creates visual maps of semantic networks supplementing the discussion of research results.

Step 4: The fourth step analyzes the co-evolution of semantic networks. To answer R_{2c} , R_{2d} , and R_{2e} , QAP correlation analysis is conducted by using UCINET (Borgatti, Everett, & Freeman, 2002). It explores the correlation between the semantic networks. In this chapter, the QAP correlation coefficients are among the same set of 467 words. The QAP analysis allows the examination of correlations among semantic matrices that are composed of same terms. In this chapter, 60 (3 x 20) yearly semantic matrices of coverage of peace in *SCMP*, *AP*, and *XH* have the same terms, which is 467 x 467, demonstrating all concept pairs among the 467 most frequent terms within the seven concept window in each year’s coverage of peace from *SCMP*, *AP*, and *XH*. The selection of the 467 concepts was described in the research procedures. QAP correlation is similar to traditional

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correlation analysis, but QAP is a nonparametric technique that does not rely on assumptions of independence. The algorithm proceeds in two steps (Borgatti et al., 2002). First, it computes Pearson's correlation between the corresponding cells of the two networks. Second, it randomly permutes the rows and columns of the matrix and re-computes the correlation hundreds of times to determine the proportion that is larger than or equal to the measure calculated in step 1. A low proportion (< 0.05) suggests a strong relationship between networks that is unlikely to have occurred by chance.

Results

For R_{1a} and R_{1b} , both the 20 years' semantic networks of news coverage of peace in *AP* and *XH* were composed of three clusters. Table 1, 2, and 3 illustrate the proportion of each cluster in the semantic network, and also the Top10 concepts that had the greatest weighted outdegree and indegree centralities within each cluster in the two semantic networks. The first cluster in *AP* and *XH* were all centered about peace issues in Israel and Palestine. The second cluster focuses on ending the war and peace process. While *AP* emphasized the importance of the U.S. support in the process of ending the war, *XH* paid more attention to the support from China in peace process. In *AP*, the third cluster is centered about concepts related to military and violence; in *XH*, the third cluster focuses on leadership issues in the Middle East.

To test H_{1a} and H_{1b} , the weighted degree centralities of the concepts related to *war*, *violence* and *harmony* at 240 time points in *AP* and *XH* were examined with *SPSS*. The H_{1a} and H_{1b} were supported. An analysis of variance (ANOVA) showed that the weighted degree centralities of cultural concepts related to *war* and *violence* in *AP* and *XH* were significantly different, $F(1, 480) = 579.12, p < .001$; and the weighted degree centralities of cultural concepts related to *harmony* in *AP* and *XH* were significantly different, $F(1, 480) = 508.51, p < .001$. Specifically, the weighted degree centralities of the concepts related to *war* and *violence* in *AP* ($M = 2,491.14, SD = 406.45$) were greater than in *XH* ($M = 1,625.13, SD = 347.82$); the weighted degree centralities of the concepts related to *harmony* in *XH* ($M = 538.62, SD = 104.55$) were greater than in *AP* ($M = 338.89, SD = 80.14$). Table 4 and 5 illustrate the mean and

Table 1. Top 10 Concepts with greatest centralities in the first cluster of 20 years semantic networks of news coverage of peace in *AP* and *XH*

C1	The Associated Press 33.93%				Xinhua News Agency 28.94%			
	Concept	Outdegree	Concept	Indegree	Concept	Outdegree	Concept	Indegree
1	Israel	970,051	Palestine	787,224	Israel	672,256	Palestine	589,672
2	Palestine	317,507	Peace	533,478	Palestine	235,568	Israel	322,957
3	WBank	281,014	Israel	470,779	WBank	150,954	WBank	165,112
4	Agreement	260,893	Talk	426,785	GazeS	121,952	Settlement	142,269
5	Arafat	245,617	WBank	309,018	Arafat	116,265	PMinister	130,678
6	Peace	233,427	PMinister	183,961	Abbas	115,293	Side	102,617
7	Leadership	195,610	Official	180,629	Call	111,356	Plan	76,600
8	GazaS	180,219	Meeting	176,018	Attack	101,069	Negotiation	72,934
9	Meeting	171,838	Settlement	168,780	Jerusalem	72,383	Jerusalem	71,847
10	Abbas	160,506	Plan	160,100	Authority	71,411	GazeS	67,745

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Table 2. Top 10 concepts with greatest centralities in the second cluster of 20 years semantic networks of news coverage of peace in AP and XH

C2	The Associated Press 32.14%				Xinhua News Agency 48.96%			
	Concept	Outdegree	Concept	Indegree	Concept	Outdegree	Concept	Indegree
1	Country	142,896	War	182,012	Government	484,726	Peace	824,314
2	Call	111,924	President	133,513	Peace	433,738	Process	337,410
3	End	95,894	Security	104,502	Country	397,083	Security	282,521
4	President	76,803	US	100,013	Agreement	394,879	Rebel	282,241
5	Africa	71,593	World	79,308	Africa	241,467	Government	274,091
6	Council	69,476	Russia	72,802	China	189,537	Sudan	222,402
7	Foreign	66,735	Support	71,050	Add	169,211	War	217,887
8	Nation	66,142	Nation	65,100	Force	164,754	People	213,967
9	International	63,433	Party	64,024	Conflict	160,376	Support	189,381
10	Election	60,928	Work	61,206	End	157,564	Party	184,622

Table 3. Top 10 concepts with greatest centralities in the third cluster of 20 years semantic networks of news coverage of peace in AP and XH

C3	The Associated Press 33.93%				Xinhua News Agency 22.55%			
	Concept	Outdegree	Concept	Indegree	Concept	Outdegree	Concept	Indegree
1	Attack	239,084	Rebel	276,371	Egypt	171,981	Talk	318,672
2	Government	236,209	Troops	178,841	Meeting	158,037	Visit	220,088
3	Army	181,358	People	173,178	Foreign	156,095	President	214,088
4	Force	162,072	Government	153,056	Arab	154,838	Meeting	182,816
5	Group	132,243	Kill	130,798	Hold	125,577	MiddleEast	122,800
6	Fire	132,183	Soldier	125,471	Leadership	110,336	Syria	120,545
7	Kill	130,166	Military	123,850	Issue	197,979	Official	96,267
8	Bomb	107,091	Police	123,703	President	106,366	Summit	88,999
9	Fight	105,898	Serb	108,190	MiddleEast	95,669	Turkey	83,051
10	Arm	94,691	Violence	104,337	Discuss	88,481	Leadership	80,016

standard deviation of weighted degree centrality of each cultural concept. Furthermore, a trend analysis shows (See Figure 1) that, while the differences in centralities of concepts related to “war” and “violence” between semantic networks of news coverage of peace in AP and XH became smaller, the differences in centralities of concepts related to “harmony” were relatively stable over time.

For R_{1c} and R_{1d} , Table 6 and 7 illustrate the five most frequent associations of concepts related to war and violence in 20 years of news coverage of peace in AP, and the five most frequent associations of concepts related to harmony in XH. Visual maps of the associations of the cultural concepts supplement the discussion of the results. In the visual maps (Figure 2, 3, & 4), the size of the label of each concept indicates its degree centrality, such that the larger the object, the more central a concept is to

Table 4. Means and standard deviations of weighted degree centralities of concepts related to war and violence in 240 monthly semantic networks of news coverage of peace in AP and XH

Concepts Related to War and Violence		Mean	Std. Deviation
Arm	AP	161.25	33.965
	XH	138.25	32.117
	Total	149.75	34.966
Army	AP	177.67	42.570
	XH	127.73	34.886
	Total	152.70	46.218
Fight	AP	179.28	38.685
	XH	103.31	29.883
	Total	141.29	51.361
Fighter	AP	98.52	29.662
	XH	37.35	18.911
	Total	67.94	39.433
Force	AP	220.73	29.421
	XH	179.14	35.448
	Total	199.94	38.628
Kill	AP	194.98	31.056
	XH	126.52	33.672
	Total	160.75	47.129
Militant	AP	158.28	39.700
	XH	76.28	38.666
	Total	117.28	56.719

Table 4. Continued

Concepts Related to War and Violence		Mean	Std. Deviation
Military	AP	210.76	28.373
	XH	169.42	34.124
	Total	190.09	37.562
Militia	AP	69.10	40.220
	XH	30.43	22.840
	Total	49.77	37.973
Power	AP	157.33	29.974
	XH	93.48	27.524
	Total	125.40	42.985
Soldier	AP	148.43	40.097
	XH	83.19	29.321
	Total	115.81	47.935
Troops	AP	178.88	40.168
	XH	128.15	38.791
	Total	153.51	46.909
Violence	AP	176.96	37.153
	XH	110.30	40.766
	Total	143.63	51.292
War	AP	225.23	29.397
	XH	159.01	40.384
	Total	192.12	48.408
Weapon	AP	133.73	34.993
	XH	62.57	25.932
	Total	98.15	47.063

continued in following column

news coverage of peace. Lines in the maps indicate the presence of a relationship between each pair of concepts. The thicker lines represent stronger relationships between two concepts. Also, the shorter distance between two concepts, the stronger relationship there is between them.

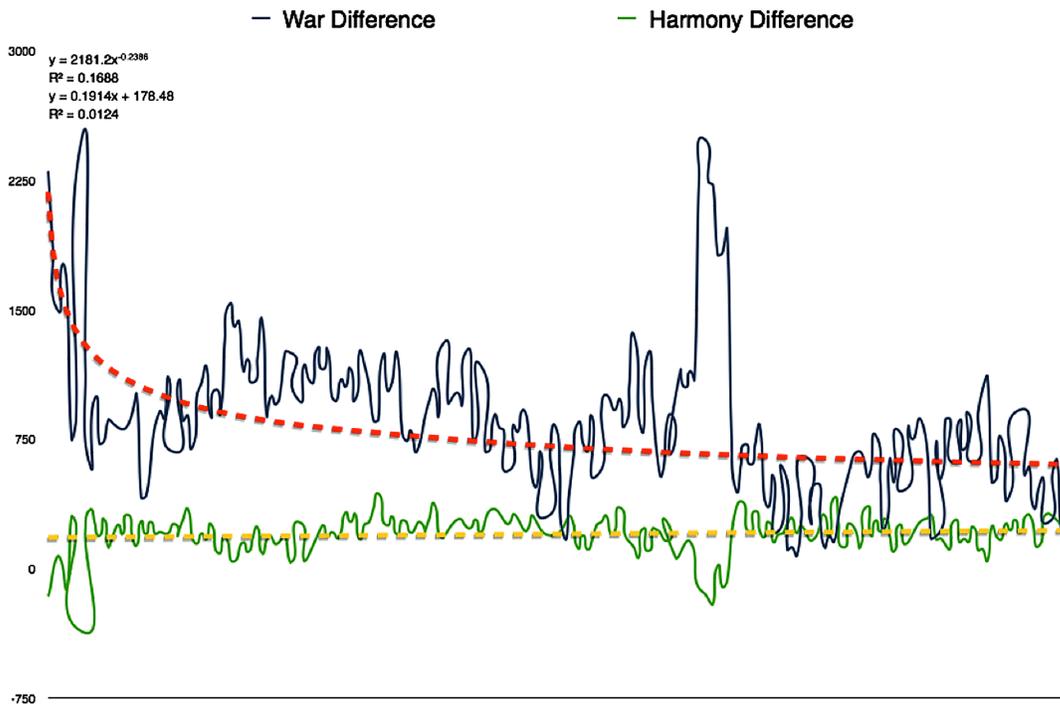
For R_{2a} and R_{2b} , five clusters were found in the 20 years of news coverage of peace for SCMP. Table 8, 9, and 10 illustrate the proportion of each cluster in the semantic network, and also the ten concepts that had the greatest weighted outdegree and indegree centralities for each cluster. The first cluster was centered about military issues. The second cluster focused on peace problems in Palestine and Israel. The third cluster was centered about peace talks and ending war. The fourth cluster emphasized aspects of democracy and independence. The fifth cluster focused on China's development and its relationship with foreign countries.

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Table 5. Means and standard deviations of weighted degree centralities of concepts related to harmony in 240 monthly semantic networks of news coverage of peace in AP and XH

Concepts Related to War and Violence		Mean	Std. Deviation
Ceasefire	AP	7.85	11.142
	XH	92.28	41.576
	Total	50.06	52.060
Cooperation	AP	76.36	30.501
	XH	123.40	26.483
	Total	99.88	36.991
Development	AP	88.55	27.624
	XH	139.33	28.870
	Total	113.94	37.982
Reconciliation	AP	56.71	25.246
	XH	67.15	27.118
	Total	61.93	26.687
Economy	AP	109.43	32.284
	XH	116.46	29.017
	Total	112.94	30.860

Figure 1. Differences in centralities of cultural concepts between semantic networks of news coverage of peace in AP and XH



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Table 6. Top five most frequent associations of concepts related to war and violence in 20 years semantic network of news coverage of peace in AP

Source	Target					Source					Target
Arm	Rebel	Government	Group	Force	Military	Accuse	Albania	Afghan	Air	Activist	Arm
	6,095	5,342	4,462	4,421	2,797	1,144	55	435	383	204	
Army	Rebel	Government	Soldier	Kill	Fire	Arm	Accuse	Afghan	Albania	Air	Army
	10,227	7,591	6,548	6,409	5,538	2,231	1,266	1,130	913	747	
Fight	Rebel	Government	People	Force	Kill	Army	Attack	Border	Begin	City	Fight
	10,035	8,620	5,565	5,389	5,015	3,533	3,314	2,137	2,036	1,987	
Fighter	Rebel	Government	Force	Group	Kill	Attack	Army	Fight	Arm	Afghan	Fighter
	4,083	3,071	2,059	1,690	1,604	1,476	1,370	1,284	983	828	
Force	Government	Rebel	Troops	Military	NATO	Attack	Fire	Army	Fight	Bosnia	Force
	13,510	11,168	9,837	8,048	7,306	7,012	5,593	5,497	5,389	4,858	
Kill	People	Rebel	Soldier	Militant	Police	Attack	Bomb	Government	Fire	Army	Kill
	16,958	10,863	8,707	7,117	6,465	12,919	8,282	8,226	7,409	6,409	
Militant	Pakistan	Military	Troops	People	Taliban	Group	Attack	Islamic	Kill	Government	Militant
	4,534	3,519	2,943	2,816	2,628	10,177	8,917	7,356	7,117	5,050	
Military	Rebel	Troops	Soldier	People	Operation	Government	Force	Attack	Kill	Army	Military
	9,871	5,877	5,350	4,241	3,185	8,774	8,048	7,009	6,308	5,487	
Militia	Rebel	People	Troops	Violence	Taliban	Government	Force	Group	Attack	Kill	Militia
	1,467	847	691	533	473	2,921	1,344	1,174	1,126	1,074	
Power	President	War	Security	Support	World	Party	Country	Election	Political	Nation	Power
	3,732	2,263	1,334	1,163	1,156	3,125	2,274	2,221	1,748	1,682	
Solider	Troops	Violence	Village	Taliban	Terrorism	Kill	Rebel	Army	Military	Fire	Solider
	4,919	1,383	1,334	642	589	8,707	6,645	6,548	5,350	4,850	
Troops	Violence	Village	Uganda	Truce	Uprising	Force	Rebel	Government	Military	Kill	Troops
	1,578	1,481	674	594	205	9,837	8,858	8,153	5,877	5,643	
Violence	Yugoslavia					Government	People	Kill	Attack	Group	Violence
	238					2,547	4,825	4,331	3,735	3,415	
War	World	Work	Weapon	Yeltsin		End	Country	President	Civil	Korea	War
	4,912	1,899	1,684	895		12,287	8,804	8,649	8,113	6,189	
Weapon	World	Work	Yeltsin			Nuclear	Iran	Iraq	NKorea	Country	Weapon
	743	707	54			5,041	2,256	2,028	1,797	1,734	

For R_{2c} , R_{2d} and R_{2e} , Figure 5 illustrates the results of QAP correlation analysis. There were significant correlations between yearly semantic networks of converge of peace in AP and XH, SCMP and AP, and SCMP and XH from 1994 to 2015, and the mean correlation coefficients were .82, .47, and .46 respectively.

Discussion

The results of the tests of R_{1a} and R_{1b} show that on the one hand, the news coverage of peace in AP and XH were centered on issues in the Middle East, especially about Israel and Palestine. On the other hand, the two news sources framed the coverage of peace from their own perspectives. Specifically, the

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Table 9. Top 10 concepts with greatest centralities in the third and fourth clusters of 20 years semantic networks of news coverage of peace in SCMP

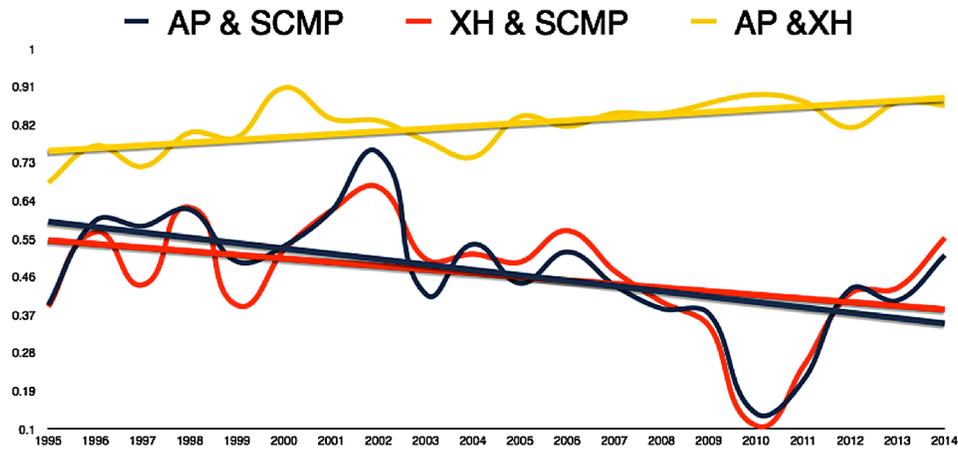
C3 South China Morning Post 23.11%				C4 South China Morning Post 10.37%				
	Concept	Outdegree	Concept	Indegree	Concept	Outdegree	Concept	Indegree
1	Peace	3,059	Peace	3,541	Mainland	850	Taiwan	2,137
2	Government	2,129	Talk	2,809	Election	794	President	1,015
3	Agreement	1,906	War	1,853	Ma	667	Party	764
4	End	1,172	Rebel	1,159	Democracy	653	Political	632
5	Deal	1,171	Process	1,081	Party	648	Strait	589
6	Make	950	Sign	954	Chen	607	Mainland	509
7	Conflict	881	Make	749	Island	508	Support	381
8	Back	804	Government	725	Independence	483	Power	317
9	Hope	645	Negotiation	568	President	428	Win	311
10	Aceh	644	Treaty	556	Political	405	Rule	239

Table 10. Table 5.3 Top 10 concepts with greatest centralities in the fifth cluster of 20 years semantic networks of news coverage of peace in SCMP

C5 South China Morning Post 30.24%				
	Concept	Outdegree	Concept	Indegree
1	China	5,729	South Korea	1,737
2	Beijing	2,692	World	1,706
3	Country	1,971	US	1,424
4	Asia	1,844	Visit	1,411
5	Economy	1,479	Relationship	1,340
6	Japan	1,285	Security	1,302
7	Foreign	1,143	Japan	1,225
8	Diplomacy	996	Nation	1,147
9	Development	941	Washington	1,093
10	International	904	Meeting	1,052

that power and military strength play a critical and vital role in maintaining the international peace. For the *harmony* frames in *XH*, in Figure 4, the concepts *China*, *cooperation*, *development*, *economy*, and *peace* were closely associated with each other. In Table 7, *China* was the source of *cooperation*, *cooperation* was the source of *economic development*, and *ceasefire*, *cooperation* and *economic development* working together were the sources of peace. This indicates China's emphasis on the harmony culture that refers to using the strategies of cooperation and economic development to maintain the global peace. Moreover, while there was a trend toward convergence of the use of war frames in *AP* and *XH*, the differences in the use of harmony frames between *AP* and *XH* were stable for 20 years (Figure 1). It can be inferred that comparing the impacts of harmony frame on news coverage of peace in *AP*, the influences of war frame on news coverage of peace in *XH* were greater.

Figure 5. Significant correlations between the yearly semantic networks of news coverage of peace in AP, XH and SCMP



The results of testing R_{2a} and R_{2b} found that besides focusing on peace issues in the Middle East, *SCMP* had hybrid frames about peace that integrated elements of peace frames from *AP* and *XH*. Similar to *AP*, coverage of peace in *SCMP* was centered about concepts relating to military and ending war simultaneously. The largest concept cluster in *SCMP* was centered about China and Beijing focusing on reporting China’s international relationships with Japan and the United States, and also economic development. It can be inferred that journalists at *SCMP* have paid close attention to China’s position on the world stage. This also indicates the fact of Hong Kong’s growing dependence on and its integration into the Chinese economy. Furthermore, *SCMP* had a unique cluster centered about the rival relations between democracy and Maoism, and the issues of Taiwan independence, indicating news frames employed by *SCMP* represents an independent voice portraying the sensitive political issues regarding democracy in China.

The results of examining R_{2c} suggest that the high correlation coefficients between the semantic networks of news coverage of peace in *AP* and *XH* for 20 years not only indicate the similarity between the coverage of peace in *AP* and *XH*, but also make it reasonable to attribute framing differences between coverage of peace in *AP* and *XH* to the two different cultural frames of peace embedded in news coverage. On the one hand, when reporting on the same news event, journalists in different nations are likely to follow the rapid change of an issue to emphasize its different angles, such as the geographic locations where the news occurred. On the other hand, cultural characteristics in line with the existing schemata of journalists’ belief system can transcend the change, and become relatively persistent parts of news frames.

The results of R_{2d} and R_{2e} revealed that both the semantic networks of coverage of peace in *AP* and *XH* were significantly correlated to semantic networks in *SCMP*. However, while there was a trend toward convergence of the semantic networks of coverage of peace in *AP* and *XH*, the correlation between *AP* and *SCMP*, and the correlations between *XH* and *SCMP* demonstrated similar decreasing trends over 20 years. In Figure 5, it can be seen that from 2000, when the correlations between *AP* and *XH* went up, the correlations between *AP* and *SCMP*, and the correlations between *XH* and *SCMP* went down. This indicates that beginning with the new century, the convergence of peace frames between the *United States* and *China* may create room for *Hong Kong* to develop its own independent and unique peace frame. On the contrary, the divergence of peace frames between the two nations with great political power may

result in strengthening Hong Kong's bridging role between the United States and China integrating both war and harmony frames. In the dynamic process of interacting with the co-evolution of peace frames in the United States and China, the hybrid peace frame in Hong Kong has been created.

Implications

In this chapter, computer assisted semantic network analysis methods were used to determine the extent to which the two different cultural frames of peace were present in the 20-year dataset. This chapter represents an example to use the "Big Data" from an online database to analyze, conceptualize, and visualize peace issues in the digital age. The longitudinal analysis of the salience of cultural concepts in semantic networks and the analysis of co-evolutions of semantic networks of media content from the United States, China, and Hong Kong provided a method to understand the framing dynamics at the macro level, which is manifested as different national cultural groups compete in sponsoring their preferred frames and negotiate the construction of dominant norms of peace culture on the global stage. In particular, the constant salience of the cultural concepts related to war and harmony in semantic networks of peace coverage in *AP* and *XH* indicates the symbolic competition between the U.S. and China.

In the process of the re-figuration of the world order on the global stage, the understanding of the distinct conceptualizations of peace in the United States and China is very important for the maintenance of world peace. The U.S. and China, as the world's two most powerful nations, when negotiating international peace issues, they should be aware of the others' conceptualization, as they are doing regarding North Korea. Specifically, the Chinese should understand that the U.S. prefers use force to insure peace and respond accordingly. The U.S. should understand that while Chinese would prefer to use cooperation and reconciliation to insure harmony, they are less attempted to challenge the pre-dominance of the western power and its emphasis on military strength.

The study of the news frames in Hong Kong has provided scholars a valuable example by examining the dynamic process of the creation of regional hybrid frames. For a region, such as Hong Kong, whose culture represents the integration of several large national cultures, the evolution of peace frames might be influenced by the interaction of several powerful countries (i.e. the U.S., U.K. and China) that all have strong connections with this region. The convergence of cultural frames of the powerful countries could contribute to the maintenance of cultural diversity of small countries and regions, and thus facilitates world peace and stability. On the contrary, the divergence of cultural frames in the powerful countries could result in the polarization of the world, which may bring out conflicts at the regional and global levels.

In the era of globalization, the increasing interdependence of goods, services, and people on the global stage accelerates the trend of cultural convergence between the nations of the world including the U.S. and China, which creates similar views. The formation of a new world civilization is taking place due to the intensified communication between the countries of the world. In the case presented in this chapter, the process of the cultural convergence and the development of common understandings between the U.S and China will have significant impacts on the maintenance of cultural diversity of small countries and regions, and thus contribute to the peace at the global level. In particular, in the next few decades, if China overtakes the U.S. as world's largest economy, the Chinese harmony culture may play a more significant role in the maintenance of the world peace.

Limitations and Future Research

This chapter is not free from limitations. The first limitation lies in the study of framing dynamics. The research only focused on examining the building of peace frames, and related dynamics at the macro level. It does not address the framing dynamics of peace at the micro level. The rapid development of information and communication technology provides more and more opportunities for audiences to use the web-based public spaces to express their opinions and interact with each other (Barnett, Xu, Chu, Jiang, Huh, Park, & Park, 2017). The individual-level discourse on web-based public spaces can be regarded as a reflection on the ideas coming from the production of mass media. The analysis of co-evolution of semantic networks of human discourse of peace on the web-based public spaces and the content of mass media can provide a way to understand how the individual-level outcomes of peace framing activities contribute to the meaning construction of the dominant peace culture in the world.

Future scholars also can place the semantic network analysis of peace frames within a larger social context to address the connections and co-evolutions of semantic networks of media content with other networks examined in the fields of political science, sociology, and anthropology, such as the global conflict networks, interracial marriage networks, and tourism flows, to provide a deeper and more comprehensive examination of the peace framing activities in human society. Also, the future scholar can determine if the results of this study can be generalized to other news sources in the United States, Mainland, and Hong Kong. Finally, scholars could replicate this study for Russian, Iranian and Arabic news outlets to explore how they view peace and to develop a common understanding with these groups too, so that the stability of the world order can be maintained.

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