

China and the Arctic

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Much attention has been paid to China's Arctic ambitions as of late, with many commentators warning of a forthcoming aggressive pursuit of control over Arctic resources and shipping lanes. This article reviews China's longstanding scientific, and growing economic and political, interests in the region and concludes that China has far more to gain by cooperating with Arctic neighbors and buying energy from Arctic EEZ-based projects, than by pursuing an aggressive and confrontational exploration strategy, which could be counterproductive for China's own position regarding disputes in the South China Sea. China has been pursuing cooperative and collaborative relations in the region, and is likely to do so in the future, not least because it is in its strategic and economic interest to do so.

The commercial and strategic implication of climate change and the melting of the sea ice in the Arctic have drawn attention not only of Arctic states, but also of some other countries that have no territorial access to the region, such as China and Japan.¹ Growing Chinese interest in the Arctic seems to be a rather recent phenomenon that was highlighted by Linda Jakobson in her report for the Stockholm International Peace Research Institute (SIPRI) in 2010 (Jakobson, 2010). Since then there has been a lot of mass-media publications and speculations on that topic, but not that much academic research, resulting in the construction of an image of a potentially threatening China. China is often described as being very interested in both Arctic mineral resources and the opening of Arctic shipping routes, but in this characterization there is a hint of a perceived threat, as commentators are often stressing that China's appetite may lead Beijing into considering the Northwest Passage (NWP) as an international strait, and resources as open up for grabs (Spears, 2009; Lalonde, 2008; Borgerson, 2008: 64).² Thus, the intensified interest of the world community towards the Arctic and towards China's growing presence in this region has raised a lot of questions. What does China's interest in

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the Arctic denote regarding its long-term goals? What is the scale of China's polar research and collaboration? What is the official position of the Chinese government towards the Arctic? Has Beijing elaborated any strategy related to the main Arctic issues – the exploitation of natural resources and the development of new navigation passages? In fact, China is indeed trying to define an Arctic policy, but does not wish to, nor does it, represent a threat to claims floated by the coastal states.

China's "New" Interest for the Arctic?

The Chinese Arctic and Antarctic Administration (CAA) was founded in 1981 as the Office of the National Antarctic Expedition Committee. The official Chinese research program in the Arctic formally began in 1989 when the Polar Research Institute of China was founded and the CAA adopted its present name. The first Chinese academic works on the Arctic appeared as early as 1988 (Wang X., 1988) and since then the number of Chinese publications and research has grown at a very impressive rate. The same year, the Chinese Academy of Sciences began to issue a new quarterly journal, the *Chinese Journal of Polar Research*, in order to broadcast the findings of the Chinese researchers related to the Arctic and Antarctic regions.

Most articles that were published in a dozen different Chinese journals between 1988 and 2008 focused on the Arctic glaciology, climatology, oceanographic science, upper atmospheric physics, as well as on the Arctic biological and environmental studies. A quick survey on China's largest database search engine, Wanfang Data (万方数据),³ retrieved 680 articles that included the word "Arctic" (北极) in their title and that were published before 2008. Most of these articles (49% of the total number) are related to all kinds of climatologic issues (ex: Gong and Wang, 2003; Wu et al, 2008); others are treating questions of biodiversity (23%), environment (10%), technology (10%), linguistics and history of Arctic native nations (8%). No major Chinese scientific article ever considered political issues in the Arctic before 2007. However, in the last five years, several publications related to Arctic politics, legal issues and strategic interests have appeared.

In 1992 China started its first scientific five-year research program in the Arctic Ocean, which was realized in cooperation with German universities in Kiel and Bremen. Within ten years, from a country that had no Arctic research whatsoever, China became a country that had established, in 2004, its own research station, *Yellow River*, in the Arctic (at Ny-Ålesund, on the island of Spitsbergen, Norway) and that conducted four independent Arctic missions (1999, 2003, 2008 and 2010). For

these purposes, in 1993, Beijing purchased a Russian-made icebreaker from Ukraine, baptized *Xuelong* [雪龙] – the *Snow Dragon*. The 167-meter-long vessel has an icebreaking capacity of 1.2 meters and is equipped with advanced systems of self-contained navigation and weather observation. There is a data processing center and seven laboratories as well as three operating boats and a helicopter. In 2010, the *Snow Dragon* helped a Chinese research team build a floating ice station in order to conduct a 15-day research mission in the Arctic Ocean (Zhang, 2010), in the frame of its long-term research interest in the sea ice evolution, in particular in the Beaufort and Chukchi Seas, north of the Bering Strait. But China also boasts three permanent research stations in Antarctica, and from 1985 to 2012, the Chinese Arctic and Antarctic Administration organized 5 Arctic and 28 Antarctic science missions: in China, it is the Antarctic, not the Arctic that gets the lion's share in polar research budgets. Indeed, the Antarctic is more accessible to China than the Arctic, because, under the terms of the Antarctic Treaty (1959), China does not need any country's permission or specific authorisation to build stations, launch expeditions and do polar research there.⁴ So, in a way, the Antarctic was and still is a test-platform for Chinese research activities in the Arctic because of similar environmental conditions.⁵ However, it would be a misjudgement to think that China, as of 1981, thought of the Antarctic with a view to developing Arctic research: nothing in the literature attests to this idea.

In 2011, the Chinese government decided to invest \$300 million US to build a new research icebreaker in order to better support its future projects in the polar areas. The new icebreaker will have a number of facilities that will allow Chinese research teams to study the oceanic environment, integrate data for real-time oceanic monitoring, deploy and retrieve detectors and conduct aerial studies using helicopters (People's Daily Online, 2011). According to Chen Lianzeng, deputy director of the State Oceanic Administration that supervises and coordinates China's Arctic and Antarctic research, the two icebreakers will conduct expeditions in polar regions for more than 200 days annually (ibid).

Although China's interest in the Arctic is often pictured by the mass media as a rather recent phenomenon, China has been doing research in the Arctic for years now and had established all the organizational structure to do so more than fifteen years ago. China certainly is a late-comer to the Arctic compared to the circumpolar states, but Beijing's interest in that region is not recent; it was just never noticed or considered "strategic" before 2010.

China's Official Position Coexists with More Assertive Scholars' Assertions

Until now China has not yet published any official Arctic strategy. On the contrary, the Chinese government has always stipulated that it has no official strategy or any particular agenda in the Arctic region (Spears, 2011). Beijing has adopted a very cautious approach and is vigorously denying having any aggressive ambition and strategic intention toward Arctic shipping or natural resources opportunities. For instance, Qu Tanzhou, Director of the Chinese Arctic and Antarctic Administration, said that "China did not prospect for oil and gas resources in the Arctic area nor has the capability or capacity to mine oil and gas there" (Interfax China, 2012).

The Chinese government explains its growing interest and presence in the Arctic mainly by the necessity of doing research on the climatic changes occurring in the region (Zhang and Ren, 2012). The air stream of the Arctic seems to be a major cause of the occurrence of extreme weather in China. Therefore, the Arctic region in fact concerns China's economic and social development and security directly (Qin and Chen, 2001).

At the same time, Beijing has pointed out that according to the United Nations Convention on the Law of the Sea, all the high sea areas and its resources are the common heritage of mankind, so China has every right to participate in the exploration of the Arctic (Wang Q., 2010). Though not an Arctic country, China is located in the northern hemisphere and is directly affected by all the changes and evolutions in this area. Therefore, it is only natural that China should participate in international Arctic dialogues and cooperation (Xu, 2012).

As for the sovereignty issues in the Arctic, the debate on limits to place on coastal states' claims in the Arctic Ocean is reflected in academic articles (Jia, 2010), but it is not specifically Chinese, as German scholars notably reflected on it as well (Witschel, 2010). Chinese officials are avoiding any detailed discussion on this matter, insisting that the respect for sovereignty is a guiding principle of international relations and of China's foreign policy.⁶

However, a number of Chinese scholars and professionals seem to have a much less cautious point of view on the matter. They suggest that the Chinese government abandon its neutral position and formulate an assertive policy that could help China defend its interests in the Arctic (Jakobson, 2010: 6; Li, 2009; Zhang S., 2010). This rather radical opinion was published not only by leading Chinese academic journals but also on internet sites of government news networks, such as *Xinhua* and *Sina.com*. In order to be published in such journals, all articles have to pass through a multilevel

editorial review, so it seems highly unlikely that these opinions could be made public in these media venues without prior authorization from all kinds of commissions and political institutions. The publication of such incautious opinions could be indicative of Beijing's willingness to become a more active player in the Arctic. The growing number of such articles in the print media and on the Chinese news websites might also be an attempt to prepare public opinion for this eventuality.⁷ To what extent, therefore, are these viewpoints reflective of the government's?

One may also reflect on contentious comments by Rear Admiral Yin Zhuo, former president of the Chinese Naval Strategy Institute, that the Arctic belongs to all the people around the world and that no nation has sovereignty over it. "The current scramble for the sovereignty of the Arctic among some nations has encroached on many other nations' interests," he observed, arguing that China should play an indispensable role in Arctic exploration as it shelters one-fifth of the world's population (Yin, 2010:11).

Whether the military is pushing the government to be more assertive in the Arctic, or whether the government is using the military to fly its own kite, is not clear (Blunden, 2012:126). Also radical are Li Zhenfu's declarations that China could stake a claim in the Arctic. Indeed, Li does not explicitly explain his rationale for this, but argues that in the face of "out-of-control" Arctic littoral state claims on the Arctic, China should consider "the possibility of our country's open declaration of sovereignty over the Arctic and Arctic sea routes, as well as territorial claims." (Li Z., 2010) It seems distinctly unlikely, however, that Beijing would push Arctic claims subsequent to a definitive international resolution of Arctic sovereignty issues; and the trend seems towards resolution rather than growing conflicts (Wright, 2011), as attested to by the 2010 treaty between Russia and Norway, and the 2012 fast developing negotiations between Canada and Denmark on Hans Island (Humphreys, 2012), which is the last land dispute in the Arctic and is over a 1km² island in the Nares Strait.

It must be noted, though, that not all Chinese scholars that wrote on political aspects of the Arctic defended an assertive position from China. Liu Huirong and Liu Xiu (Liu and Liu, 2010), for instance, hint that Canada's position is legitimate, while Mei Hong and Wang Zengzhen (Mei and Wang, 2010) produce a rather balanced analysis of Canada's claims.

An Active Diplomacy

In parallel with the development of a large-scale research program in the Arctic, China is also developing its bilateral, mostly commercial and economic relations with small Arctic states, in

particular with Iceland and Denmark. In April 2012, Prime Minister Wen Jiabao toured Sweden and Iceland in a bid for his country's permanent observer status (BarentsObserver, 2012), after Denmark pledged it would support China's position (Reuters, 2011). China is investing in joint energy, minerals exploitation and Arctic navigation projects with these countries and is stimulating the development of bilateral trade, taking advantage of Iceland's bankrupt finances.⁸ China is reportedly interested in the Icelandic government's project to develop a transarctic shipping route (Icelandic Government, 2007), as well as mining in Greenland (International Business Times, 2012). London Mining aims to produce 15 million tons per year of high-grade iron ore pellets by 2015 at its Isua project, with investments from Sinosteel and China Communications Construction Corporation. Greenland Minerals and Energy claims the Kvanefjeld deposit could produce 20% of the global rare earth supply and large amounts of uranium by 2016. Kvanefjeld's potential to influence global prices would make it a project of strategic interest to Chinese companies like Inner Mongolia Baotou Steel Rare Earth, already the world's largest rare earth metals producer (Erickson and Collins, 2012).⁹ China's growing economic presence in Iceland and Denmark has attracted rather extensive media attention, for instance when Huang Nubo, a wealthy Chinese businessman, revealed his plan to buy a piece of land in Iceland for investment purposes in November 2011.¹⁰ At the same time, China's cooperation activities with major players in the Arctic – Canada, USA and Russia, are still of rather limited scale, although cooperation with Russia in the energy sector is developing.¹¹

A parallel is sometimes traced between China's position in the Arctic and in the South China Sea. This comparison is misplaced for several reasons.

First, in the South China Sea, Beijing claims sovereignty over vast maritime expanses on the ground that they are historic waters, although it never specified what the nature of these waters would be: internal or territorial waters? EEZ? The Chinese 1992 Law on the Territorial Sea did not make China's claim clearer. However, China's sovereignty is, according to Beijing, rooted in history in the South China Sea (Lasserre, 1996 and 2005), whereas China only pleads that the Arctic Ocean is the "inherited wealth of mankind" (Wright, 2011b), which can be argued if the sea zone China refers to is the sea beyond the EEZ and extended continental shelves (see UNCLOS art. 136 about the "Area", called the "common heritage of mankind"). China knows very well it cannot argue it has a long tradition of using the Arctic.

Second, in the Arctic, China does not claim any sovereign right over sea expanses. Unless it begins openly questioning UNCLOS, which it ratified in 1994, there is no way China can consider claiming an EEZ nor a continental shelf in the Arctic.

Third, in the South China Sea, Beijing deployed a growing and more and more capable Navy (Lasserre et Le Roy, 2004), whereas it never considered sending warships to the Arctic – if only because it does not have such a capacity.

Fourth, questioning the claims of Russia or Canada over Arctic straits would prove counterproductive for China. In the South China Sea, Beijing claims the Gulf of Tonkin and the Qiongzhou Strait, between Hainan Island and southern China, as part of Chinese internal waters. For China to argue the NWP is an international strait, would be tantamount to reckoning the Qiongzhou Strait also is (Lalonde and Lasserre, 2012).

Conclusion

China seems to be at the forefront of news reports about the Arctic, with most commentators pointing at some potentially hostile strategies being designed by Beijing. However, the realities of China's approach towards the Arctic, its seaways and its energy resources does not seem well understood under this widely held perception that China could conceal an 'aggressive' Arctic, because of reported strategic views regarding shipping and energy production. China certainly is becoming more proactive and confident in the global sphere, including the Arctic, and would certainly assert its new role as a great power, an attitude that translates into its bid for observer status at the Arctic Council.

Yet, China has far more to gain by cooperating with Arctic neighbors and buying energy from Arctic EEZ-based projects, than by pursuing an aggressive and confrontational exploration strategy, which could be counterproductive for China's own position regarding disputes in the South China Sea. Similarly, should China argue that the NWP is an international strait, such a position would weaken China's own assertion that the Qiongzhou Strait, between Hainan and continental China, lies in China's internal waters.

Notes

1. In April 2009, Japan applied for the observer status with the Arctic Council, a high-level circumpolar intergovernmental forum that discusses and addresses Arctic related issues, and expressed a very keen interest in environmental programs, and transportation or passage through the Arctic area, and development of resources in the Arctic Circle, cf. Weese, B. (2010, September 3). Japan latest non-Arctic country to claim stake in North Pole. *Toronto Sun*. Retrieved 26 April 2012 from www.torontosun.com/news/canada/2010/09/03/15241971.html.
2. Quoting Borgerson, S., p. 64: “even China operates one icebreaker, despite its lack of Arctic waters”. This oddity, or so are we invited to think, is a hint that China might nurture malevolent intentions. However, many other countries with no Arctic or Antarctic waters deploy one or more icebreakers or ice-capable research ships: Australia, France, Germany, Japan, South Africa, South Korea, Spain, Sweden... The web abounds with sites displaying the common-sense-based idea that “China” (probably meaning the Chinese government) must be interested in Arctic routes since they will be shorter ways to reach European markets”.
3. *Wanfang Data* is China’s first database, created in the 1950s by the Institute of Scientific & Technological Information of China (ISTIC). It originally served the purpose of digitalizing information about companies and their products. It was later transformed into a vast electronic database of multidisciplinary information, and provides access to many collections of periodicals, thesis’, and other types of archives. See www.wanfangdata.com.cn (retrieved on 8.9.12).
4. For more information on China’s Antarctic activities and strategies, see Brady, A.-M. (2010), China’s Rise in Antarctica?, *Asian Survey*. 50(4), 759-785; Zou, K. (1993). China's Antarctic policy and the Antarctic Treaty system, *Ocean Development & International Law*. 24(3), 237-255.
5. Some mass-media publications are even suggesting that China could use its Antarctic bases “to improve satellite communications to military forces that increasingly depend on space-based infrastructure” and that the Antarctic has therefore an important military significance, cf. *Nature* (2012, January 18). Antarctic Treaty is cold comfort. Retrieved 9.22.12, from www.nature.com/nature/journal/v481/n7381/full/481237a.html.
6. China’s own extensive claims in the South China Sea are founded on this same concept.
7. For more information, see Alexeeva O., Lasserre F. (2012). The Snow Dragon: China’s Strategies in the Arctic. *China perspectives*, 3, 31-38.
8. As Russia did when it considered granting Iceland a €4 billion loan in October 2008, a loan later reduced to \$500 million and finally rejected by Moscow in October 2009 when it became apparent Iceland had struck a deal with Scandinavian countries and the IMF. In January 2012, China pledged to support Iceland's financial stability and economic growth. *China’s Government Official Portal* (2012, January 17). Retrieved (4.18.12) from, http://english.gov.cn/2012-01/17/content_2046830.htm.
9. China already produces about 90% of rare earth metals.
10. Though this plan never came to be realized, certain journalists have presented it as a Chinese government attempt to “build a strategic stronghold” in the Arctic, cf. Zhang, Y. Ren, Q. (2012). China defends Arctic research, *op.cit.*

11. For more information on the state of sino-russian energy cooperation, see Perfiliev, N. (2008). Perspektivo I problem rossisko-kitaiskogo neftegazovogo sotrudnichestva – Perspectives of sino-russian oil and gas cooperation. *Indeks bezopasnosti – Index of security*. 84(1); Jakobson, L., Holtom, P., Knox, D. & Peng, J. (2011). China's Energy and Security Relations With Russia. *SIPRI Policy Paper*. 29, 1-43.

References

- Alexeeva O., Lasserre F. (2012). The Snow Dragon: China's Strategies in the Arctic, *China perspectives*, 3, 31-38.
- BarentsObserver* (2012, April 17). More Chinese pressure on Arctic Council. Retrieved (4.17.12) from, <http://barentsobserver.com/en/arctic/more-chinese-pressure-arctic-council>
- Blunden, M. (2012). Geopolitics and the Northern Sea Route. *International Affairs*. 88(1), p.115-129.
- Borgerson, S. (2008). Arctic Meltdown: The Economic and Security Implications of Global Warming. *Foreign Affairs*. 67(2), 63-77.
- Brady A.-M. (2010), China's Rise in Antarctica? *Asian Survey*. 50(4), 759-785.
- Erickson, A. & Collins, G. (2012, January 18). China's New Strategic Target: Arctic Minerals. China Real Time Report (中国事实报). *Wall Street Journal*, Retrieved (10.3.12) from, <http://blogs.wsj.com/chinarealtime/2012/01/18/china%E2%80%99s-new-strategic-target-arctic-minerals/>.
- Gong, D. & Wang, S. (2003). Influence of Arctic Oscillation on winter climate over China. *Journal of Geographical Sciences*. 13(2), 208-216.
- Humphreys, A. (2012, April 11). New proposal would see Hans Island split equally between Canada and Denmark, *National Post*. Retrieved (3.10.12) from, <http://news.nationalpost.com/2012/04/11/new-proposal-would-see-hans-island-split-equally-between-canada-and-denmark/>.
- Icelandic Government (2007). *Breaking the Ice. Arctic Development and Maritime Transportation. Prospects of the Transarctic Route – Impact and Opportunities*. Akureyri, Iceland.
- Interfax China* (2012, March 15). Unmasking China's Arctic ambitions. Retrieved (4.10.12) from, www.interfax.cn/news/19951?destination=node%2F19951.
- International Business Times* (2012). Denmark Gives Access to Arctic Minerals, Rare Earths to China. *International Business Times*. Retrieved (1.19.12) from, <http://au.ibtimes.com/articles/284118/20120119/denmark-gives-access-arctic-minerals-rare-earths.htm>.
- Jakobson, L. (2010). China Prepares for an Ice-Free Arctic. *SIPRI Insights on Peace and Security* (N° 2). Retrieved (5.15.12) from, <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>.
- Jia, Y. (2010). An Analysis of the Dispute over Arctic Region's Territorial Sovereignty and Maritime Rights. *Journal of Ocean University of China*. 1, p.6-10.
- Lalonde, S. (2008, May). Legal Aspects of the Opening of the Northwest Passage. Communication presented at the *Naval Officers' Association of Canada Annual Conference*, Quebec City, Canada.
- Lalonde, S. and F. Lasserre (2012). The Position of the United States on the Northwest Passage: Is the Fear of Creating a Precedent Warranted?. *Ocean Development and International Law*, accepted.
- Lasserre, F. (1996). *Le Dragon et la Mer. Stratégies géopolitiques chinoises en mer de Chine du Sud*. Collection Chaire Raoul-Dandurand (UQÀM), L'Harmattan, Montréal/Paris.
- Lasserre, F. (2005). L'imbroglia juridique et militaire en mer de Chine du Sud. *L'information géographique*, 69, p.78-90.

- Lasserre, F. & Le Roy, J. (2004). La peur du dragon. La modernisation navale chinoise menace-t-elle la sécurité en Asie orientale?. *CANCAPS Papers* (N° 32), Toronto.
- Li, Z. [李振福]. (2009). Dihuan zhengzhi lilun biaoyan yu Beiji hangxian diyuan zhengzhi lilun zhashe [地缘政治理论演变与北极航线地缘政治理论假设] – Evolution of Geopolitics and Assumptions of Arctic Route's Geopolitics. *Shijie Dili Yanjiu* [世界地理研究] – World Regional Studies. 19(1), 6-13.
- Li, Z. [李振福]. (2010). Beiji hangxian diyuan zhengzhi di fuza wangluo tezheng yanjiu [北极航线地缘政治的复杂网络特征研究] - Research into the unique complex network features of Arctic sea route geopolitics. *Gangkou jingji* [港口经济] – Port Economy. 1, 29-32.
- Liu, H. [刘惠荣] & Liu, X. [刘秀] (2010). Beiji qundao shuiyu falü diwei di lishixing fenxi [北极群岛水域法律地位的历史性分析] -Historical analysis of the territorial waters of Arctic archipelagos. *Zhongguo Haiyang Daxue xuebao* [中国海洋大学学报] – Journal of Ocean University of China. 2, 1-5.
- Mei, H. [梅宏] and Wang, Z. [王增振]. (2010). Beiji haiyu falü diwei zhengduan ji jiejué” [北极海域法律地位争端及解决] - The dispute over the legal status of Arctic territorial waters and its solution. *Zhongguo Haiyang Daxue xuebao* [中国海洋大学学报] - Journal of Ocean University of China. 2, 1-5.
- Nature* (2012, January 18). Antarctic Treaty is cold comfort. Retrieved (9.22.12) from, <http://www.nature.com/nature/journal/v481/n7381/full/481237a.html>.
- People's Daily Online* (2011, June 22). China's new polar icebreaker to launch in 2013. Retrieved (4.10.12) from, <http://english.peopledaily.com.cn/90001/90776/90881/7416709.html>.
- Qin, Q. & Chen Y. (2011, September-October). The Post-Cold War International Cooperation in the Arctic Region. *China International Studies*, 138-155.
- Reuters (2011), Denmark welcomes China in from the Arctic cold. Retrieved (10.28.11) from, www.reuters.com/article/2011/10/28/us-china-arctic-idUSTRE79R28S20111028.
- Spears, J. (2009). China and the Arctic: The Awakening Snow Dragon. *China Brief*. 9(6), 1-13.
- Spears, J. (2011, January 28). The Snow Dragon Moves into the Arctic Ocean Basin. *China Brief*. 11(2). Retrieved (4.10.12) from, [www.jamestown.org/programs/chinabrief/single%20/?tx_ttnews\[tt_news\]=37429&tx_ttnews\[backPid\]=25&cHash=ed639f4996](http://www.jamestown.org/programs/chinabrief/single%20/?tx_ttnews[tt_news]=37429&tx_ttnews[backPid]=25&cHash=ed639f4996).
- Wang, Q. (2010, May 6). Arctic research set to be beefed up. *China Daily Online*. Retrieved (4.26.12) from, http://chinadaily.com.cn/usa/2010-05/06/content_11018535.htm.
- Wang, X. (1988). *Beiji haishui mianjide shikong fenbu jiqi Changjiang shang, zhongyouxiuqi shuliang fenggude guanxi* [北极海冰面积的时空分布及其与长江上、中游汛期水量丰枯的关系] (“On the relationship between spatial and temporal distribution of Arctic sea ice and the Yangtze River high and middle water level yearly variations”) (Unpublished master’s thesis). Hohai University, China.
- Weese, B. (2010, September 3). Japan latest non-Arctic country to claim stake in North Pole. *Toronto Sun*. Retrieved (4.26.12) from, www.torontosun.com/news/canada/2010/09/03/15241971.html.
- Witschel, G. (2010). New Chances and New Responsibilities in the Arctic Region: an Introduction. In G. Witschel, I. Winkelmann, K. Tiroch & R. Wolfrum (Eds.), *New Chances and New Responsibilities in the Arctic Region* (pp. 33-37). Berlin: Berliner Wissenschafts Verlag.
- Wright, D.C. (2011). The Panda Bear Readies to Meet the Polar Bear: China Debates and Formulates Foreign Policy Towards Arctic Affairs and Canada’s Arctic Sovereignty, *CDFAI Papers*, 1-6.

- Wright, D.C. (2011b). *The Dragon Eyes the Top of the World: Arctic Policy Debate and Discussion in China*. Naval War College, Center for Naval Warfare Studies, China Maritime Studies Institute, Newport, RI.
- Wu, B., et al. (2008). Arctic dipole anomaly and summer rainfall in Northeast China. *Chinese Science Bulletin*. 53(14), 2222-2229.
- Xu, S. (2012, April). *Chinese Arctic and Antarctic Administration – China's Activities and Prospecting in the Arctic*. Paper presented at the Centre d'études des politiques étrangères et de sécurité (CEPES) Conference "La Chine et l'Arctique", Montréal, Canada.
- Yin, Z. (2010). China's Arctic Play. *The Diplomat*. Retrieved (3.9.10) from, <http://the-diplomat.com/2010/03/09/china%E2%80%99s-arctic-play/>.
- Zhang, J. (2010, August 8). Chinese expedition team to build fixed ice station in Arctic Ocean. *People's Daily Online*. Retrieved (4.10.12) from, <http://english.people.com.cn/90001/90781/90879/7097332.html>.
- Zhang, S. [张胜军]. Li, X. [李彤]. (2010). Zhongguo nengyuan anquan yu Zhongguo Beiji zhanlue dingwei [中国能源安全与中国北极战略定位] - China's Energy Security and Its Strategic Positioning in the Arctic Region. *Guoji guancha [国际观察] – International Review*. 4, 64-71.
- Zhang, Y. & Ren, Q. (2012, January 31). China defends Arctic research. *Xinhua*. Retrieved (4.18.12) from, http://news.xinhuanet.com/english/china/2012-01/31/c_122637030.htm.
- Zou, K. (1993). China's Antarctic policy and the Antarctic Treaty system. *Ocean Development & International Law*. 24(3), 237-255.