# A Study on Japanese and Foreign Place Names in Google Earth Satellite Images and GNS Database on South Korea\*

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### 구글어스의 위성영상과 미국의 지명데이터베이스에 나타나는 한국내 일본식 및 외국어 지명에 관한 연구\*

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**Abstract**: With recent rapid globalization, accurate information for the foreign countries is increasingly important. Errors based on inaccurate information and unequal international relationships complicate the situations. In this article, authors analyzed the Japanese place names which appear on the Google Earth images and place name database of the NGA. Google Earth already becomes a tremendous soft power in internet society; therefore, accurate information on the satellite image is more necessary than ever.

This article finds that many types of errors exist in the place names in Google Earth image service. Also many place names are listed with Japanese pronunciation in GNS database as variants. The Japanese place names have not been used in topographic maps published since 1910s and 1930s. Japanese place names were widely used in US military maps published in 1946. 1:250,000 maps published in 1954, however, doesn't seem to use Japanese pronunciation any more.

Key Words: Japanese place names, NGA, GNS database, Google Earth, Geonames DB, variant

요약: 세계화의 빠른 진행과 더불어 외국에 대한 정확한 인식과 더불어 한국에 대한 외국인의 정확한 인식은 매우 중요한 문제로 등장하였다. 지명과 관련하여 아직도 사실적 오류와 더불어 국제관계에서의 미묘한 역학관계로 인하여 많은 오류가 남아 있는 점도 사실이다. 그 가운데 미국의 위성영상서비스들 가운데 대표적인 구글사의 검색서비스와 미국지리정보국의 지명데이터베이스에 관한 내용을 분석함으로서 문제의 뿌리가 어디인지를 밝히고자 하였다. 이미 구글에 관련된 논문은 Science Direct 검색결과 2008년 5월 현재 213편의 연구가 검색될 만큼 전세계적으로 문화적 영향력을 가지고 있다. 또한 구글과 연구란 단어로 검색하면 무려 414만여 개의 자료가 검색될 만큼 방대한 내용을 포함하고 있다. 따라서 구글 위성영상 서비스의 정확한 지명표기는 어느 때보다 중요하다. 본고에서는 전 세계의 지명을 영어로 서비스하고 있는 구글사의 구글어스와 미국의 지명 DB내에 있는 오류사례를 찾아내어 그 유형을 분석하였다. 우리나라의 경우 이칭이라는 형태로 일본식 발음을 가진 지명이 등재되어 있으며 그 숫자도 많다. 1946년에 발간된 미군의 지도에는 일본식 표기가 많으나, 1954년도에 발간된 1:250,000 축척의 지도에는 나타나지 않았다.

주요어: 일본식지명, 국가지리정보국, 구글어스, 지명DB, 이칭

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#### 1. Introduction

Place name is what land expresses itself, or geographical identity which is expressed on the land. Place-name is also an intrinsic component of political landscape, and its study should be an important part of political geography (Cohen and Kliot, 1992). Place name should be the one and only name which tells us geographical identity. Affixing names to places is inextricably linked with nation building and state formation in Israel (Azaryahu and Golan, 2001). As if each person has a personal name, each place has its own place name. One place should have one name, however, which is not always the case. Sometimes one place has two different names, or two or more place have the same name. Place names are being born, evolve and are extinguished, which is truer in case of places with longer tradition and history such as Korea. In case of Israel and Poland (Galasinski and Skowronek, 2001), place name plays a symbolic role as an expression of ideological values. The selection of place-names has become a powerful tool for reinforcing competing national Zionist ideologies. There are two competing place-name themes: the message of essentialism and continuity, and epochalism and change (Cohen and Kliot, 1992; Azaryahu and Golan, 2001).

The reasons for the research are as follows; there is an urgent research need for the study of Japanese place names and other types of foreign place names in Google images, because place names must be correct and contemporary to avoid mis-communication. Also place names are rapidly being made and changed due to the rapid economic growth of last few decades, therefore place names need systematic maintenance and also correct place names should be marked on the widely used internet-based maps.

However, many names of Japanese pronunciation

still appear in the internet. The worst part of it is that more than 200 names with Japanese impacts and western countries still appear on the Google Earth images, which makes Korea a very unique compared with former Japanese colony countries such as Taiwan, which has longer colonial history than Korea.

Standardization of place names becomes necessary for an effective communication in the field of education, transportation, travel, and national security affairs (Choi, 2002). In terms of foreign affairs, standardization is necessary to maintain and claim the territory of a nation, symbolism, and communication among the countries. Standardization of place names is the process of unification of names, which establishes an official name to a specific place. In this respect, two names in one place as is shown in Google images may give incorrect idea of dual language or territorial dispute over that place. Standardization of place names has two aspects. One is domestic, which means establishing a place name to a specific place with official language of the nation. The other is international standardization, which means foreign countries adopt the standardized names from other countries.

This study is comprised of two parts, first part is the research projects on analysis of place names on the Google Earth images and the other is the statistical analysis of Korean place names in GNS database (NGA GEOnet Names Server) maintained by the NGA(National Geospatial-Intelligence Agency) of the USA.

Hypotheses for this research are as follows;

- 1) Japanese place names have been widely used since the first official topographic maps were printed in 1910s.
- 2) Most of English place names were introduced for the first time for the mapping purposes during the Korean War.

#### 2. Place Names: Korean perspectives

As is discussed, one aspect of standardization of place names is domestic, which means establishing a place name to a specific place with official language of the nation.

#### 1) Standardization of place names in Korea

There are three different kinds of place names(NGII, 2005). They are natural place names, administrative names, and marine place names, therefore three different ministries are involved in the operation of place names including Ministry of Land, Transport and Maritime Affairs whose acting agency is National Geographic Information Institute (NGII), Ministry of Public Administration and Security (MOPAS). NGII oversees the operation of central GNC (Geographic Names Committee), map correction and maintenance of database of place names.

There are many other ministries and agencies dealing with place names such as Korea Highway Corporation, Ministry of Environment and Ministry of Education, Science and Technology (MEST). There are many other acts and ordinances dealing with place names within each ministry and agency including the Geodesy Acts.

### 2) What is the meaning of a variant name in GNS database?

According to the NGA's official definitions, a variant is any other name by which a feature is or was known. Such names can be historical or no longer used, or can be in use, but less widespread. Only one official feature name is allowed for Federal usage in America. There are no exceptions to this rule (NGA website). Japanese place names in the form of variant may be enlisted in the database in historical senses considering colonial period which lasted more than 36 years.

According to the official UN documents (UNGEGN, 2006), however, Asian people believe that place name is not only important information but also special cultural phenomenon. Many ancient place names have rich meanings. They

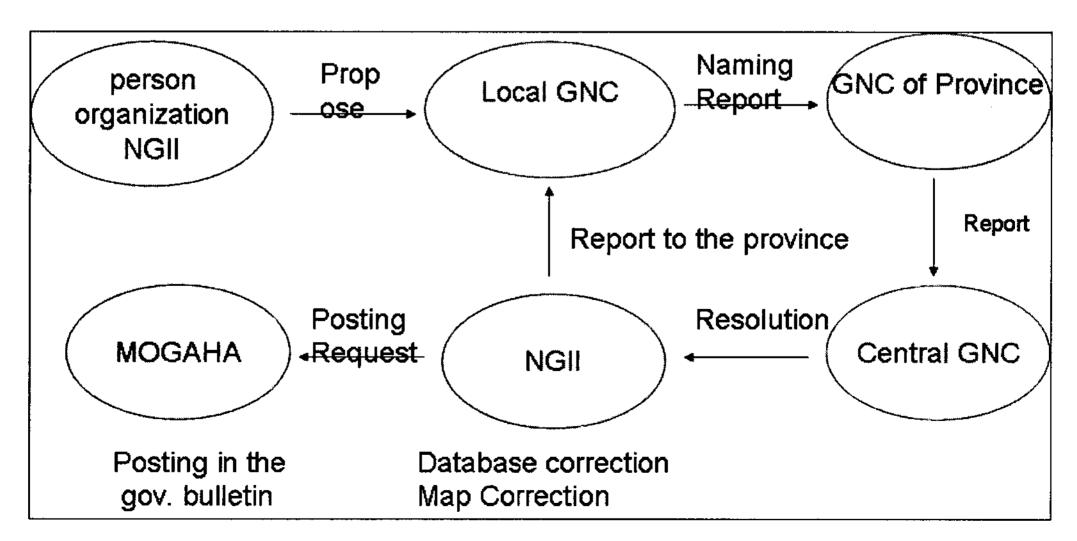


Figure 1. Procedures for naming and change of place names

REGION	DESIG,	LATITUDE LONGITUDE AREA	UTM	JOG NO.	UFI	UNI	PPL CLASS MOD. DATE
BGN Stand	k <u>Kanghwa-man</u>						
	Generic Name: -man						
<u>5</u>	BAY	37° 34' 46' 126° 24' 3( <u>KS12</u>	BG76	NJ52-09	-709228	-997603	2006-07-14
BGN Stand	l <u>감화만 (UN⊫ 6514357)</u>						
	Generic Name: 만						
Variant	Ganghwa-man (UNI=						
Vallalit	<u>6513856)</u>						
Variant	Kokwa Wan (UNI= -999024)						j
Variant	Kokwa Bay (UNI= -999022)						
Variant	Koka-wan (UNI= -998921)						
Variant	Imperatrice Gulf (UNI= -						
A CORTICAL III	996378)						

Figure 2. Typical Geonames Search results from GNS (before May 2008's homepage renewal)

should be protected and researched as active fossil of human history. The soul of place names is their special meanings. Simply replacing original characters with others may distort or eliminate their meanings and cut the connections between ancient and modern place names (UNGEGN, 2006).

For example, in order to fully respect history and preserve culture, China regards protecting old culture of place names as an important principle. The homophones/polyphones/variant form and rarely-used Chinese characters in place names should be decreased to make transmitting of place names information easier in the age of computer and internet. Wariness is needed in the course of the standardization of place names. The opinion of local people should be fully respected. If changing characters or pronunciations lead to the primary meanings be changed, the original forms should be preserved until suitable way be found in the future. Some variant forms characters of place names will also keep on being used as standard characters.

26,500 place names from South Korea are listed in the GNS Gazetteers, which seems to be a large number of place names for a remote country like South Korea. Gazetteers, which are prepared and published by the National Imagery and Mapping Agency (NIMA) for the U. S. Board on Geographic Names (BGN), contain place names and associated information for places and

features in various foreign countries and areas. The entries include the standard names approved for official U.S. use by GNS. In addition, the gazetteers list the unapproved variant names, evaluation of the quality of the names, designations, latitudes, longitudes, area number (first-order administrative unit, such as province, in which the place or feature is located), UTM grid coordinates, and the map numbers of the Joint Operations Graphic (JOG) sheets on which the names appear or would appear if a JOG covered the area. Country/area names and spellings of names are current up to the gazetteer's publication date. Gazetteer for the South Korea was published in 1966, and has not been updated since then.

45,473 place names are listed in the Geonames database in NGA. Geonames database also contains various information about a place including BGN standard name, variant names, latitude, longitude, UTM, JOG No, UFI, UNI code, populated class, and updated date. Typical search results come such as Figure 2.

Many names, however, are duplicated as variants; therefore, actual number of place names in the server will be decreased significantly. At this moment authors do not know actual number of individual features. In case of Kanghwa-man which is BGN standard, for example, five variant names are listed in the database. Among them, three names such as Kokwa Wan, Kokwa Bay

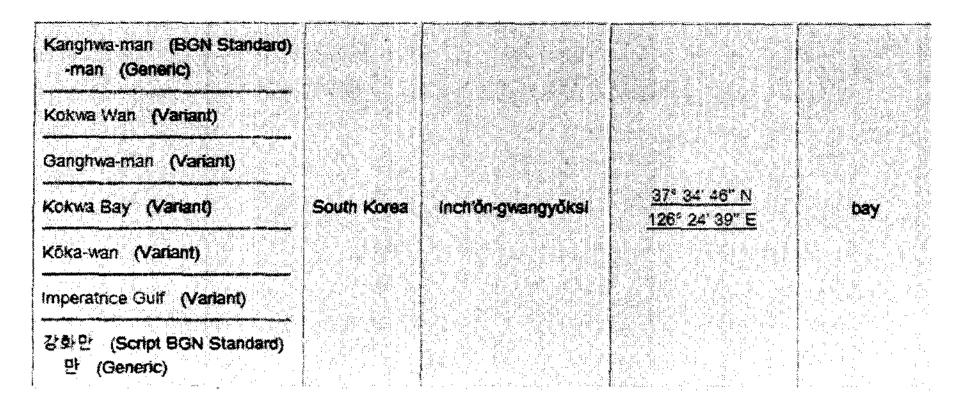


Figure 3. Typical Geonames Search results from NGA's new database

(after May 2008's homepage renewal)

and Koka-wan, are Japanese pronunciation, and the other one, Imperatice gulf, is written in English word (which was, in fact, named after the Tsarina of Russia, Maria Alexandrovna).

Among the 45,473 place names in the database, the number of schools and temples is 433, that of populated places and administrative units is 32,987, that of landforms is 4.596, that of marine and coastal features is 1466, and the number of the others is 107 (Fig. 4). The names for the administrative units are relatively up-to-date.

There are 5,293 place names for the coastal and marine features in database, among which island

names are dominant (81.2%). The other names include the names for the beaches, islands, bay area, and inlet, etc (Fig. 5).

Also, there are 4,595 place names for landform features in the database. They can be summarized as Table 1 (Fig. 6). The place names for the mountain, hill, peak, rock and mountain are the most common which is very natural considering that almost 70 percent of nation is composed of mountains.

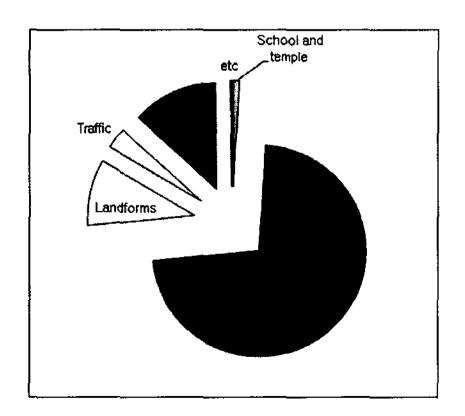


Figure 4. The statistics of geonames in the database

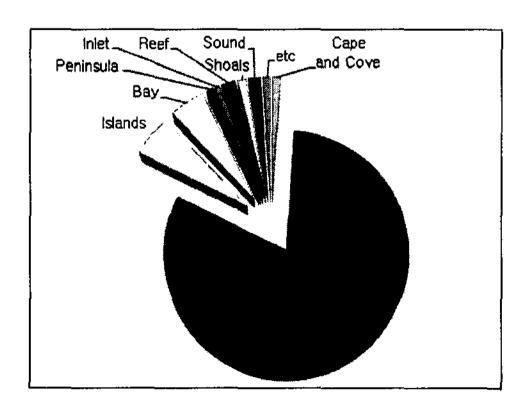


Figure 5. The place names for coastal and marine features

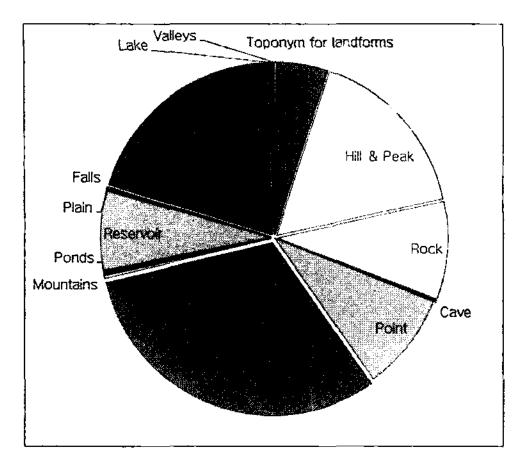


Figure 6. The place names for the landform features

Table 1. Place names for the landforms

Place names	Number of names		
Valleys	11		
Pass	221		
Hill & Peak	761		
Rock	421		
Cave	10		
Point	422		
Mountain	1430		
Mountains	13		
Ponds	18		
Reservoir	341		
Plain	6		
Falls	8		
Streams	912		
Lake	21		

## 3. Types of faulty place names found in Google Earth

As can be seen from the tags in Figure 7, there are more than 200 places which are marked with

Japanese name or English place name. They can be classified in several groups depending on their types. Most of the place names are written in Japanese with Korean pronunciation; however, several names are English, French and even Russian names, the origin of the names are not



Figure 7. The locations of Japanese and Foreign place names found in Google Earth images of the South Korea

always known. Also, Chinese place names are occasionally used. In following sections, authors will discuss some examples of each type.

#### 1) English name only

There are many English place names in the Google image. Basil bay is a typical example of English name (Fig. 8). The name 'Basil' is first found in the Captain Basil Hall's book(1818), whose title is Corea - Account of a Voyage of Discovery to the West Coast of Corea and the Great Loochoo Islands. Later, Captain Allen Young (1865) also introduced the name Basil in his article "On Korea".

According to the journal of Captain Basil Hall, two Royal Navy vessels, the Alceste and the Lyra, had borne a part of Lord Amherst's mission to the imperial court at Peking in 1816. The two ships were ordered to survey the western coast of the Korean peninsula and the Ryukyu Islands. In the book, they put the Basil in the nautical chart (Fig. 9). In fact, the name Amherst is also in the nautical chart (southern islands between the Korean peninsula and Jeju Island); however, it does not appear on the Google Earth images.

The place name, Basil bay, is also found in the GNS database. In the same search result, there are two more Japanese place names listed as variants including Hinin-wan and Hijin-wan. Six English place names including Basil Bay are found in the Hall's book, among which three names still are listed in the GNS database (Table 3).

Other good examples are Jeju Island and Hallasan. A. Young(1865) described the Jeju Island

REGION	DESIG.	LATITUDE	LONGITUDE	Update
BGN Standard	Piin-man	36° 06' 48" N	126° 31' 24" E	2001-03-19
Variant	Hinin-wan			
Variant	Hijin-wan			
Variant	Basil			

Table 2. GNS search result for the Basil bay

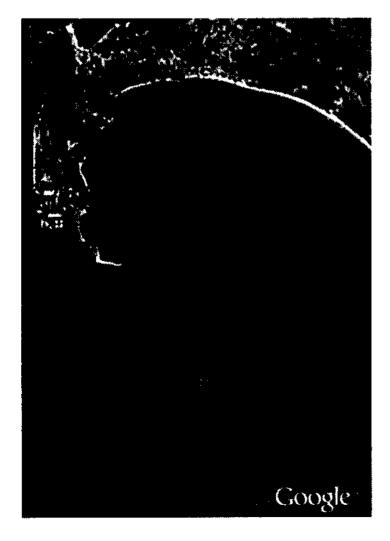


Figure 8. The Location of Basil Bay

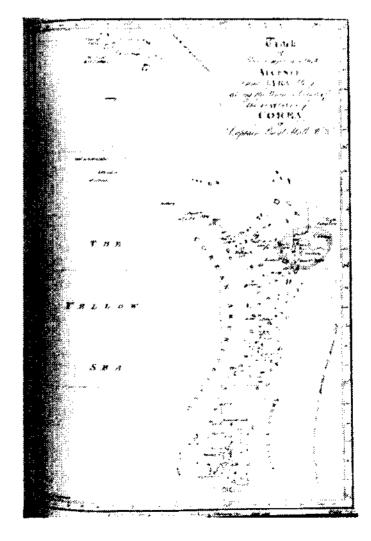


Figure 9. Nautical charts from B. Hall's Corea

Table 3	Place name	list found is	n the R	Hall's Corea
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Place names	Page	GNS database	Google Earth
Basil Bay	Appendix map	yes	yes
Hutton's Island	Appendix map	none	none
Helen's Island	Appendix map	yes	none
Amherst Isles	Appendix map	none	none
Murray Sound	Appendix map	none	none
Thistle Island	Appendix p 17.	yes	none

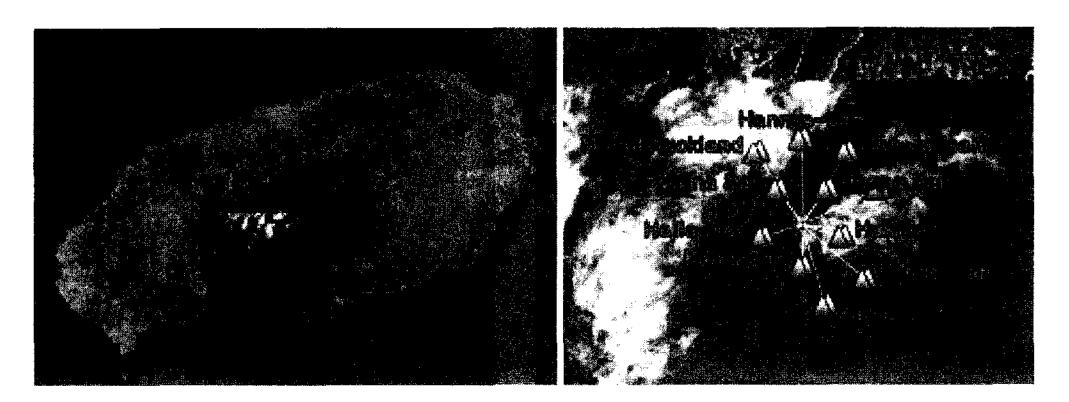


Figure 10. Halla-san and Jeju Island in Google Earth image

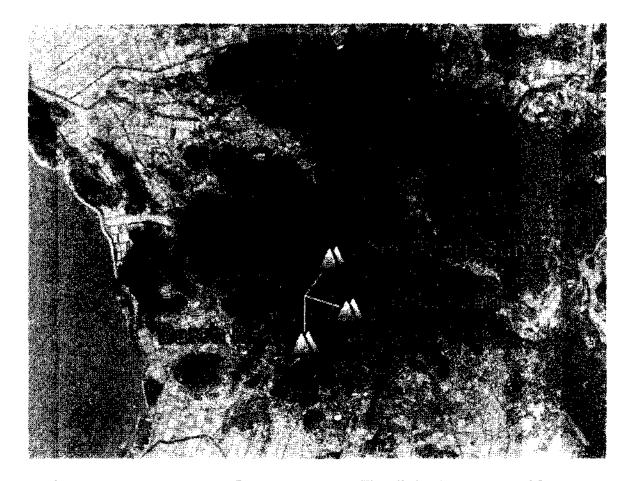


Figure 11. Chingang-San written in English-Japanese-Korean



Figure 12. Mount Borlase in Gyeongnam Province

and Halla-san in his article.<sup>3)</sup> In Google image and GNS database, nine different names appear, among which the name 'Mount Auckand' is most strange name which doesn't have any reasonable origin. The name 'Mount Auckland' itself can easily be found during the internet search among the tourism company's web sites.

Small number of English-Japanese-Korean transcription are also found, one of which is Baron Peak, Chinko-san, Chingang-san in Kanghwa Island, in Inchon Metropolitan City(Fig. 11). However, the origin of the Baron Peak cannot be traced at this moment. Kang Hoa Island is listed in Captain Blake's journal, which listed 11 place names around the Kanghwa Island, however there is no Baron Peak in that journal (Szezesniak, 1957).

The origin of 'Mt. Borlase' may be found in the England's naval history (Fig. 12; Thiebaud, 2006). Captain Borlase was known as one of the great captains and admirals listed in the Royal Navy's

history. However, the exact way of how a small mountain in Busan area got the name of Borlase cannot be explained at this moment and it is not certain that Mt. Borlase is named after Captain Borlase after all.

#### 2) Korean-Japanese parallel

The existence of Japanese place names is the most frequently-found errors in the Google Earth images. Most of the names in the image has not been used since the liberation from the Japanese colonial regime. In fact, the first modern topographical maps published in 1910s adopted Korean names and publishers affixed Japanese characters along with the Chinese characters as can be seen in <Figure 13>.

However, in Google Earth images, Japanese pronunciation still appears without any justifiable explanation. Taebaek-san, for example, is marked on the images by two Japanese names, the one is

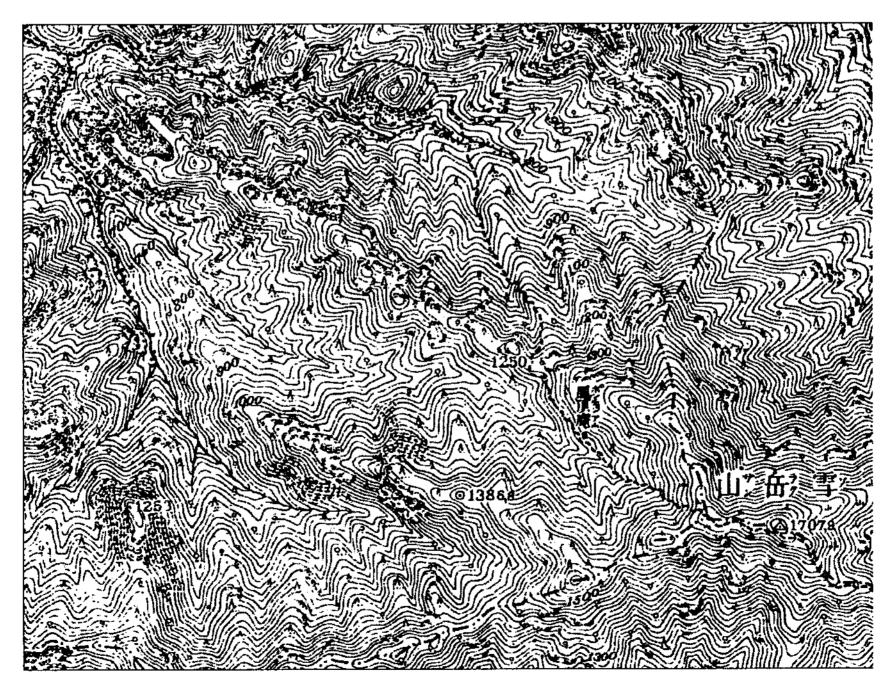


Figure 13. Soraksan area in 1:50,000 topographical maps published in 1910s

Table 4. C	GNS search	result for the	Taebaek-san
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REGION	DESIG.	LATITUDE	LONGITUDE	Update
BGN Standard	T'aebaek-san	37° 05° 51° N	128° 54° 59° E	1996-05-20
Variant	Taihku-zan			
Variant	Taihaku-san			

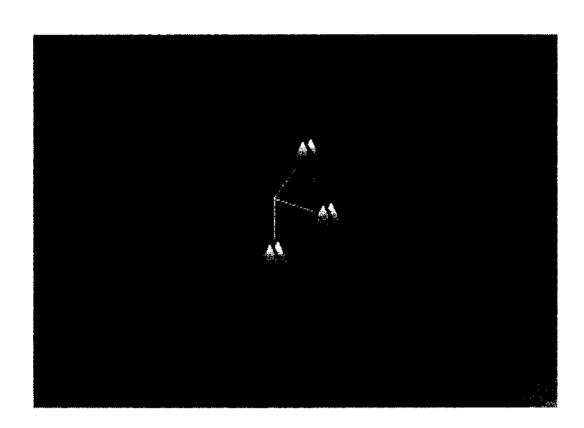


Figure 14. Taebaek-san in Gangwon Province

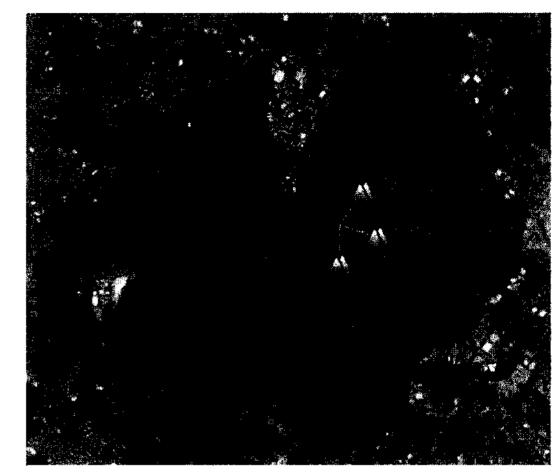


Figure 15. Kwanak-san in Seoul area

Taihku-zan and the other is Taihaku-san (Fig. 14). Both of the names for the mountain are listed as variants with the BGN standard - Taebaek-san (Table 4). As is well-known, Taebaek-san is closely connected with the Korean culture. Actually this mountain is regarded as the one of the holiest mountains in entire Korean Peninsula. However, it is marked in Japanese place names.

As is the case with Kwanak-san in Seoul Metropolitan City (Fig. 15), many of the highest

peaks with symbolic meanings in Korean culture surrounding large cities in Korea are listed in Japanese transcription. <Table 5> summarizes the selected mountains with Japanese place name on the Google satellite images. The example of "대 둔산" shows that the NGA's system has already encoding module to input Korean character in a true font.

In fact, Japanese pronunciation did not show up in topographic maps printed in 1910s through

Table 5. Selected famous mountains in Japanese transcription

City, Province	BGN Standard	varia <b>nt</b> .
Daegu	Pisŭl-san	Pisil-san, Hishitsuzan, Hihitsu-zan, Hihitsu-san
Gangwon	Sŏrak-san	Ungaku-san, Soraku San, Setugaku San, Setsugaku-zan, Seggaku-san
Gangwon	Odae-san	Gotaizan, Godai-san
Gangwon	Hambaek-san	Hanbaek,Hambeak
Gangwon	Hwaak-san	Kwangak-san, Kagakuzan, Kagaku-san
Jeolla Bukdo	대둔산	Taiton-san, Taedon-san, Daiton-san

1930s. Even though they put the Japanese Kana with the Korean names, they are following Korean pronunciation systems. The real problem is when the Japanese pronunciation came up in the official maps, which problem needs more study, therefore future research will focus on how the Japanese pronunciation system showed up in US military maps and Google images.

#### 3) Japanese-Korean, Simple Mistake and Chinese Pronunciation Only

There are many spelling errors and simple misunderstanding of the place names with similar characters. One example is Sorak-san. Sorak-san is the most frequently-visited national park in Korea by both Korean people and many foreigners. However, seven different names appear on the image (Table 6), of which six names are originated from Japanese pronunciation. One interesting name is Ungakusan, which is simplly a mistaking of Chinese character Seol (雪) for the similar character Un (雲), which seems to be very common errors among the Japanese people (pers. comm with professor Park J. H).

There may be more Chinese place names in the Google Earth images, especially trans-border region with China. As shown in the Figure 17, Baekdu-san in Google Earth is marked with

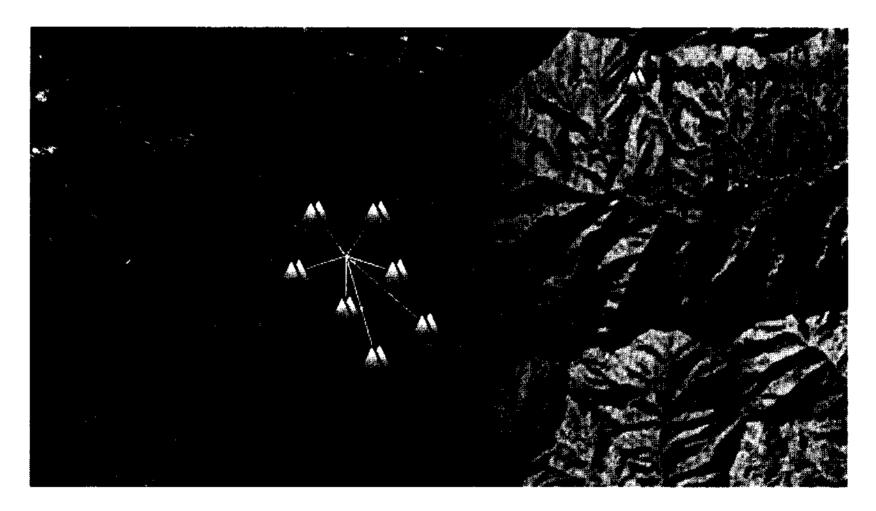


Figure 16. Soraksan area in Google Earth image

Table 6. The names on Sorak-san mountain in Google Earth image

REGION	DESIG.	LATITUDE	LONGITUDE
BGN Standard	Sŏrak-san	38° 07' 07" N	128° 27' 57" E
Variant Ungaku-san			
Variant	Soraku San		
Variant	Setugaku San		
Variant	Setsugaku-zan		
Variant	Setsugaku-san		
Variant	Seggaku-san		

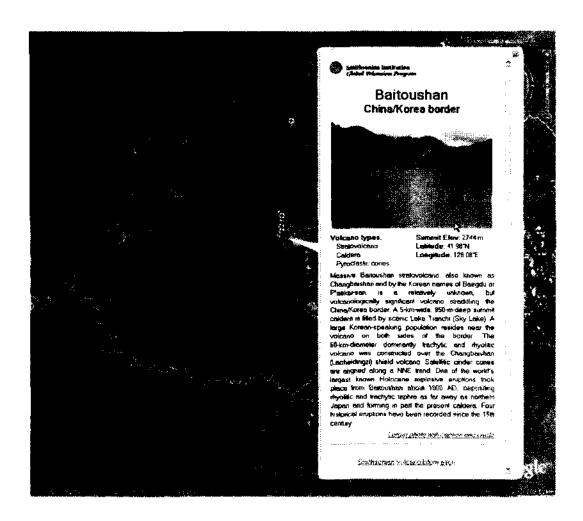


Figure 17. Baekdu-san in Google Earth image and USGS volcano directories

Baitoushan or sometimes Changbai-san.

#### 4. Discussions and Conclusions

More than 200 Japanese place names and several foreign (mainly English names) found in Google images, have been regarded as the natural outcome of adoption of topographic maps printed during the Japanese colonial period during the Korean War. In fact, official topographic maps published in 1910s and 1930s, however, adopted Korean pronunciation system with Japanese Kana side by side with Kanji for correct pronunciation purposes. Contrary to the hypothesis that Japanese place names came from the topographic maps compiled during the colonial period, they came from uncertain sources. Authors, therefore, find no reasons for the Japanese and Korean names appear simultaneously, and they are treated equivalently. To compare with the similar cases, authors checked the case of Taiwan which had been under the Japanese control since 1895 and was

liberated in 1945 after the World War II. It is natural to think that the legacy of Japanese control remains in place names as is the case with the Korea. Total 1,280 names for the mountain and mountains has been analyzed, however, none of them in the images has Japanese pronunciation.

Even though Korean Government has made international efforts for the adoption of standardized Korean place names, its efforts, however, are focused on big features such as Donghae and Dokdo Island. For example, both East Sea and Sea of Japan appear on the Google earth image. However, we need to make more systematic efforts to make portal sites adopt the correct place names for the relatively small but important features in the widely used Google Earth images. To achieve that goal, more efforts should be focused on the analysis of contents in GNS database and their origin for the removal of so-called variant place names with Japanese origin with no valid historical background what so ever.

Many English place name have been traced and many of them date back to 19th century or even further. For example, Basil Bay can be found in Hall's book published in 1818, among the six place names in the nautical chart, three names still appear in the GNS database. More systematic research in the origin of foreign names should be followed in this category.

The existence of Japanese place names is the most frequently-found errors in the Google Earth images. Even though most of the Japanese names in the image have not been used since the liberation from the Japanese colonial regime, they appear in the images. In fact, the first modern topographical maps published in 1910s and later 1930s adopted Korean names and publishers affixed Japanese characters along with the Chinese characters in order to pronounce correctly. Shortly speaking, even though they put

the Japanese Kana with the Korean names, they were following Korean pronunciation systems.

Contrary to the hypotheses, the Japanese place names have not been used in topographic maps published since 1910s and 1930s. But, Japanese place names were widely used in some US military's 1:12,500 scale maps published in 1946. 1:250,000 maps published in 1954, however, doesn't seem to use Japanese pronunciation any more. So, the real problem is when the Japanese pronunciation came up and disappeared in the official US maps, which problem needs more study. Therefore, following researches will focus on how the Japanese pronunciation system showed up in US military maps and Google images.

Also, to correct the problems discussed above, following efforts should be made within our national system:

Firstly, there are existing principles for the abolishment of place names, which should be emphasized consistently. Names including, temporary, with Japanese legacy, derogatory, composite words lacking proper origin should be abolished immediately.

Secondly, Romanization principles for the Korean characters should be firmly and inarguably set up to correct the foreign agencies' questionable place names. For example, McCune-Reischauer System for the Romanization is still widely used in foreign countries, which needs to be changed to follow Korean official Romanization system.

#### **Notes**

1) Place names have the same meaning as geonames, geographical names or toponyms. In this research, authors will use place names. A toponym is a name of a locality, region, or some other part of Earth's surface, including natural features (such as streams) and artificial ones (such as cities).

- 2) Variant or alternate Former name, name in local usage, or other spellings found on various sources
- 3) "Quelpart Island lying fifty miles south of the Korean coast may be distinguished afar by the towering peak (6785 feet), Mt. Auckland, Kanra san. the long slopes and subsidiary spurs of this great volcanic cone comprise the 715 square miles of the island. Quelpart was first brought to the attention of the western world by one Hendrick Hamel, a Dutch sailor who was shipwrecked upon its coast in 1653. Before that date Dutch navigators in the Cathay trade had come in contact with the island and, noting its similarity in form to the galiot, had dubbed it "quelpart," a slang word for such ships. This has been adopted in conventional usage though rightfully the name is Saishu To in Japanese and Chyoijudo, Korean. Nothing of a detailed or purely geographic nature has, to the writer's knowledge, ever been published on it in any western language."

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