

THE ROLE OF WARFARE IN THE FORMATION OF THE STATE IN
KOREA: HISTORICAL AND ARCHAEOLOGICAL APPROACHES

by

BONG WON KANG

A DISSERTATION

Presented to the Department of Anthropology
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

June 1995

"The Role of Warfare in the Formation of the State in Korea: Historical and Archaeological Approaches," a dissertation prepared by Bong W. Kang in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Anthropology. This dissertation has been approved and accepted by:

Chair of the Examining Committee

Date

Committee in charge: Dr. C. Melvin Aikens, Chair
 Dr. Vernon Dorjahn
 Dr. William S. Ayres
 Dr. William G. Loy

Accepted by;

Vice Provost and Dean of the Graduate School

Copyright 1995 Bong Won Kang

An Abstract of the Dissertation of
Bong Won Kang for the Degree of Doctor of Philosophy
in the Department of Anthropology to be taken June 1995
Title: THE ROLE OF WARFARE IN THE FORMATION OF THE STATE IN
KOREA: HISTORICAL AND ARCHAEOLOGICAL APPROACHES

Approved: _____
Dr. C. Melvin Aikens

This dissertation is concerned with the formation of the Silla Kingdom, a protohistoric state located in the southeastern portion of the Korean peninsula. Combining theoretical issues and empirical data concerning state formation, I present a case study of how one prime mover, warfare, played a role in the formation of the Silla Kingdom between the first and fifth centuries A.D. Two hypotheses associated with the significance of warfare were formulated and tested against both historical and archaeological data.

To examine alternative models about the role of irrigation works and long-distance exchange in the development of the Silla Kingdom, I analyzed relevant historical documents, stelae, and selected archaeological data. Both documentary and archaeological data suggest that irrigation works and long-distance exchange were not sufficiently influential to claim critical roles in the emergence of the state in southeastern Korea.

To test hypotheses formulated about the role of warfare, a number of bronze and iron weapons excavated from burials in southeastern Korea were

quantified and analyzed in conjunction with data on wars mentioned in the historical documents. In particular, an analysis of empirical data on various kinds of metal weapons that probably were used in battles strongly supports the premise that warfare was a significant factor in the state formation process of the Silla Kingdom between the first and fifth centuries. Both historical and archaeological sources also reveal that there was a continuous local indigenous development from lower-level sociopolitical stages to higher-level ones in southeastern Korea, finally dominated by the Silla kingdom. Furthermore, based upon the results of mortuary analysis, I conclude that the Silla Kingdom became a state-level society sometime between the middle of the fourth and the beginning of the fifth centuries during the reign of King Naemul (356-402 A.D.).

CURRICULUM VITA

NAME OF AUTHOR: Bong Won Kang

PLACE OF BIRTH: Euisung, North Gyungsang Province, Korea

DATE OF BIRTH: December 16, 1954

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon
Arizona State University, Graduate School
Kyung Hee University, Graduate School, Korea
Kyung Hee University, Korea

DEGREES AWARDED:

Doctor of Philosophy in Anthropology, 1995, University of Oregon
Master of Arts in Anthropology, 1990, Arizona State University
Master of Arts in History, 1984, Kyung Hee University, Korea
Bachelor of Arts in History, 1981, Kyung Hee University, Korea

AREAS OF SPECIAL INTEREST:

Anthropology of Complex Society, Historical Archaeology,
Quantitative Archaeology, Science of Philosophy, Northeast Asian
Archaeology

PROFESSIONAL EXPERIENCE:

Instructor, Anthropology 310, Prehistory of Korea, in the Department
of Anthropology at the University of Oregon, Eugene, 1995.

Graduate Teaching Fellow, Department of Anthropology, University
of Oregon, Eugene, 1991-1994

Ceramic Analyst (Part-time), Soil Systems Inc., 1121 North 2nd Street,
Phoenix, Arizona 85004. (602)-253-4938, 4939. 1989-1991

Part-time Lecturer (Teaching History) in Inchun Junior College,
Inchun, Kyunggi, Korea, 1985-1986

Museum Curator (Full-time), Kyung Hee University Central
Museum, Huegidong 1, Dongdaemungu, Seoul, Korea, 1981-1986

AWARDS AND HONORS:

Homer G. Barnett Fellowship, Department of Anthropology,
University of Oregon, Eugene 1994-1995,

Dissertation Research Fellowship, Graduate School, University of
Oregon, Eugene 1994-1995

PUBLICATIONS:

Kang, Bong Won

1994 The Impact of Warfare in the Formation of Complex Societies in the
Protohistoric Korean Peninsula. Paper presented at the 59th Annual
Meeting of Society for American Archaeology, in Anaheim,
California, April.

1993 An Examination of an Intermediate Socioevolutionary Type Between
Chiefdom and State. Paper presented at the 58th Annual Meeting of
Society for American Archaeology, in Saint Louis, Missouri, April.

1993 Social Structure in a Megalithic Tomb Society in Korea. *Papers of the
British Association for Korean Studies* 4:197-215.

1992 "Walled-Town State" in Korean Ancient History: A Critique.
Prehistory and Ancient History (Seonsa Wa Godae) 3:127-154. (in
Korean with English abstract).

1992 A Reexamination of Korean Megalithic Tombs and Social
Organization. Paper presented at the 57th Annual Meeting of the
Society for American Archaeology, Pittsburgh, Pennsylvania April.

- 1991 A Megalithic Tomb Society in Korea: A Social Reconstruction. *Hanguk Sanggosa Hakbo (Journal of Korean Ancient Historical Society)* 7:135-222.(in English with Korean abstract)
- 1991 A Preliminary Study of the Relationship Between House Orientations and Thermal Efficiency. Paper presented at the 56th Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana, April.
- 1991 Social Structure in a Megalithic Tomb Society in Korea. Paper Presented at the Seminar on Korean Archaeology. Cambridge University, England, March.
- 1986 Kaya Eui Jungchijuk Baljungwa Kyungjaejuk Baekyungae Kwanhan Sogo [A Study of the Political Development and Economic Background of Kaya] *Kyung Hee Sahak* 12-13:1-20.(in Korean)
- 1985 *Yuksahak Yeongubub* [A Method of the Study of History] (in Japanese), translated into Korean. Minjok Munhwasa, Seoul, Korea.
- 1984 Kaya Jaeguk Eui Hyungsung Sikiwa Kangyeokae Kwanhan Yeongu [A Study of the Formation Date and Territory of Kaya]. *Daehakwon Nonmoonjib* 12:7-33.(in Korean)
- Hwang, Yong Hoon and **Bong Won Kang**
1982 *Hyunduk Wanghoo Paeneonggi Balgul Josabogosuh* [Excavation Report for the Destroyed Mausoleum of Queen Hyunduk] (in Korean). Kyung Hee University Museum, Seoul, Korea.

ACKNOWLEDGMENTS

I would like to express sincere appreciation to the members of my doctoral committee, Dr. C. Melvin Aikens (chair), Dr. Vernon Dorjahn, Dr. William S. Ayres, and Dr. William G. Loy, for their invaluable supervision in the preparation of this manuscript. Dr. Aikens' encouragement and support helped me get through the program as quickly as possible, otherwise it would have taken several more years, which is not uncommon in this discipline these days. Dr. Dorjahn provided a wide range of sociocultural anthropological background and ample study cases of African sociopolitical transformation. Dr. Ayres' insight into epistemology and quantitative methods helped me not to wander around in terms of archaeological data analysis and interpretation. I owe much to the fourth member of my committee, Dr. Loy, who helped me to understand the fundamentals of geography and cartography. Apart from their academic help, I was especially impressed by my entire committee's warm heartedness which made me work under such a nice environment.

I owe a particular debt to the Department of Anthropology and the Graduate School at the University of Oregon for their financial support from the beginning to the end of my Ph.D. program. The support provided me not only financial solutions but also a great opportunity to accumulate teaching experience with a foreign language. I give many thanks to Dr. Song-nai Rhee, who was always available and allowed me to use his library. Numerous conversations with him over many years concerning Korean history and

archaeology were critical for me to transform my shaky ideas into more concrete ones. I should give a special thanks to an old professor of mine, Dr. Yong-guk Tak. He sent me a number of letters for nine years to emotionally support and encourage me and always showed his deep concern for my family. Dr. Mong-lyong Choi and Dr. Ki-dong Bae also provided great moral support, which was very helpful along the way.

Many thanks to Dr. Yi-gu Kwon, then the Director of Youngnam University Museum, and Do-young Yang, Yong-sung Kim, Soo-nam Kim, and Jae-gyung Lee, staff at the Museum. They allowed me to take part in one of their archaeological projects during the summer of 1993, which enabled me to become familiar with the archaeology of the Silla Kingdom and to collect a great amount of archeological data. Thanks also goes to Gyung-taik Kim, who lent me a number of Korean archaeological excavation reports of which the contents turned out to be a major portion of my data. Jong-gyu Choi, Gyung-chul Shin, and Soo-nam Kim Sin, with whom I corresponded, responded readily to my requests for references and papers. Special thanks goes to Dr. Pete Armitage, Jerry Marr, and Jeff Fentress for providing many valuable suggestions, theoretical and methodological insights, and helpful critiques of my manuscript. I have also benefited from discussions of my research with Dr. David Abbott, Dr. Antonio Curet (Gettysburg College), Dr. Owen Lindauer (Arizona State University), Dr. Kathryn Winthrop, Scott Byram, and numerous colleagues in the Department of Anthropology at the University of Oregon, all of whom made significant contributions to develop my research focus. Lastly, to my parents, my thanks for supporting me and offering Buddhist masses for years; it is to them that this dissertation is dedicated.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
Theoretical Background	1
Formulation of Hypotheses.....	6
Research Procedures	8
Paradigmatic Characteristics of the Research.....	11
II. THE CONCEPT AND DEFINITION OF THE STATE: ALTERNATIVE FORMULATIONS.....	19
Introduction.....	19
Definition of Socioevolutionary Types.....	21
Problems with Terminology	23
Problems with the Conventional Definition of "State".....	27
Searching for Solutions.....	32
Summary.....	34
III. THE ENVIRONMENTAL SETTING.....	37
Introduction.....	37
Brief Description of Geography and Ecology of the Study Area.....	39
General Ecological Setting of Gyungju.....	53
Summary.....	59
IV. GENERAL ASSESSMENT OF HISTORICAL DOCUMENTS CONCERNED WITH PROTOHISTORIC KOREA.....	61
Introduction.....	61
Chinese Historical Documents.....	63
Korean Historical Documents.....	67
Problems and Discordances Between Chinese and Korean Historical Documents.....	74

Chapter	Page
Conclusion	82
V. RECONSTRUCTION OF SOCIAL STRATIFICATION IN SARO: A PRE-SILLA POLITY IN SOUTHERN KOREA	84
Introduction.....	84
Reconstruction of Social Stratification in Saro: According to Historical Accounts.....	86
Reconstruction of Social Stratification in Pre-Saro [Dolmen Period] Society: Based on Archaeological Data.....	101
Summary.....	118
VI. MECHANISMS INVOLVED IN STATE FORMATION: IRRIGATION WORKS AND LONG-DISTANCE EXCHANGE	121
Introduction.....	121
Irrigation.....	122
Long-distance Exchange.....	147
Summary.....	160
VII. MECHANISMS OF STATE FORMATION: EVIDENCE OF WARFARE FROM HISTORICAL DOCUMENTS.....	163
Introduction.....	163
Warfare.....	164
Historical References to Warfare in the <i>San quo chi</i>	167
Historical References to Warfare in the <i>Samguk sagi</i>	172
Evidence of Warfare: Fortification.....	192
Internal Conflict.....	194
Factors Conducive to Warfare: Perspective from Historical Documents	197
Summary.....	221
VIII. ARCHAEOLOGICAL EVIDENCE OF WARFARE IN KOREAN STATE FORMATION.....	224
Introduction.....	224
A Brief History of Silla Archaeology and Its Problems.....	225

Chapter	Page
Archaeological Data Utilized to Investigate Warfare	252
Archaeological Data Manipulation and Analyses.....	280
Examination of the Role of Long-Distance Exchange.....	298
Recognition of the Silla Kingdom as a State-level Society Through the Examination of Mortuary Data	302
Summary	319
IX. SUMMARY AND CONCLUSIONS.....	322
APPENDICES	328
A. LIST OF WARS RECORDED IN THE ANNALS OF THE SILLA KINGDOM IN THE <i>SAMGUK SAGI</i>	329
B. SILLA BURIAL DATA	348
BIBLIOGRAPHY.....	364

LIST OF TABLES

Table	Page
1. Agricultural Practices and Irrigation Works Recorded in the <i>Samguk sagi</i> for the Baekje Kingdom.....	126
2. Agricultural Practices and Irrigation Works Recorded in the <i>Samguk sagi</i> and <i>Samguk yusa</i> for the Silla Kingdom.....	129
3. A List of Historically Known Large-Scale Irrigation Systems in Korea.....	140
4. Carbon-14 Dates Associated with the Byukgol Canal.....	144
5. Chronicles Regarding Domestic Economies of the Silla Kingdom as Appearing in the <i>Samguk sagi</i>	154
6. A List of Traded Artifacts Discovered in the Study Area and Adjacent Areas.....	158
7. Summary of Participation in Wars with the Silla Kingdom by Other Polities, from the First Century B.C. to the Seventh Century A.D.....	174
8. The Frequency of Warfare for the Silla Kingdom Recorded in the <i>Samguk sagi</i>	182
9. Polities Voluntarily Surrendered to the Silla Kingdom.....	189
10. Tributary Activities Between Silla and Neighboring Polities Recorded in the <i>Samguk sagi</i>	190
11. Diplomatic Relations Between Silla and Neighboring Polities Recorded in the <i>Samguk sagi</i>	191

Table	Page
12. The Frequency of Construction Works for the Silla Kingdom Recorded in the <i>Samguk sagi</i>	193
13. Internal Conflicts in the Silla Kingdom Appearing in the <i>Samguk sagi</i> (Until the Unification of the Three Kingdoms, 668 A.D.).....	196
14. Population in the Sam Han Region Between the First and Third Century A.D.....	201
15. Environmental Phenomena Recorded in the Annals of the Silla Kingdom in the <i>Samguk sagi</i>	211
16. Frequencies of Environmental Stress and Warfare Recorded in the <i>Samguk sagi</i>	215
17. ANOVA for Significance of Regression of the Frequency of Weapon on Time.....	217
18. Calculations for Obtaining the Slope b and Intercept a of the Best-Fitting Regression Line.....	219
19. Archaeological Sites Utilized in this Dissertation.....	254
20. Burial Types and Their Frequencies Utilized in the Mortuary Analyses.....	259
21. Analytical Data Base of Utilitarian, Ceremonial, and Weaponry Artifacts from the Study Area.....	281
22. Summary Table of Utilitarian and Weaponry Artifacts (Axes and Knives are Included as Weapons).....	283
23. ANOVA for Significance of Regression Between the Mean Number of Weapons and Time.....	289
24. ANOVA for Significance of Regression Between the Mean Number of Utilitarian Tools and Time.....	291

Table	Page
25. Summary Table of Utilitarian Tools and Weapons Axes and Knives are Included as Utilitarian Tools.....	293
26. ANOVA for Significance of Regression of the Frequency of Weapons Through Time.....	296
27. ANOVA for Significance of Regression of the Frequency of Axes and Knives Through Time.....	299
28. Traded Items Discovered in the Study Area.....	300
29. Summary Statistics of Burial Volume and Size Through Time.....	306
30. Summary Statistics for Sumptuary Artifacts Between the Third and Fifth Centuries A.D.....	312
31. Summary Statistics for the Two Burial Groups.....	316
32. <i>T</i> - test for Equality of Mean Between Burial Size and Volume.....	317

LIST OF FIGURES

Figure	Page
1. Map of the Study Area in South Korea.....	40
2. The Location of Gyungju in the Nakdong Basin.....	42
3. Generalized Orographical Map of Korea and the Study area.....	44
4. The Distribution of Individual Basins Located in the Nakdong Basin.....	46
5. Vegetation Zones of Korea.....	48
6. Distribution of Iron Ore in the Korean Peninsula.....	52
7. Map of the Capital of the Silla Kingdom (Gyungju).....	55
8. Chronological Table of Early Korean History in Comparison with Chinese and Japanese Historical Sequences.....	92
9. Map Showing Locations of the Sam [Three] Han Societies in Korea.....	96
10. Geographic Locations of Historical Reservoirs, Canals, and Complex Societies in Protohistoric Korea.....	141
11. Frequency Polygon of Total Conflicts That Occurred in the Silla Kingdom From the First century B.C. Until the Eighth Century A.D.....	176
12. Comparison of the Frequency of Offensive and Defensive Warfare Based Upon Historical Accounts in the <i>Samguk sagi</i>	183

Figure	Page
13. Hostile Polities Which Invaded the Silla Kingdom.....	186
14. Territorial Expansion of Silla by Offensive Warfare and Local Independent Polities' Voluntary Submission Between the First and the Fourth Centuries A.D.....	188
15. Temporal Variations of Frequencies of Environmental Stresses Recorded in the <i>Samguk sagi</i>	213
16. Temporal Variations of the Frequencies of Environmental Stresses Compared Against Warfare, as Recorded in the <i>Samguk sagi</i>	214
17. Scattergram of the Frequency of Environmental Stresses on Occurrences of Warfare.....	217
18. A Bronze Vessel Discovered at Ho-U Chong, Capital of the Silla Kingdom (see the Chinese Characters Inscribed on the Bottom of the Inside of the Vessel)	248
19. Locations of Archaeological Site Referred to in Dissertation.....	255
20. Bronze Weapons Discovered in the Study Area.....	264
21. Iron Knives Discovered in the Study Area.....	266
22. Different Types of Axes Discovered in the Study Area.....	268
23. Mural Paintings of the Goguryo Kingdom on Which Many Iron Shafted-hole Axes are Depicted.....	269
24. Iron Arrowheads Discovered in the Study Area.....	272
25. Iron Spearheads Discovered in the Study Area.....	273
26. Iron Sabers (a-f) and Swords (g) Discovered in the Study Area.....	275
27. Yuja E-gi (Barbed- or Hooked-knife).....	276

Figure	Page
28. Iron Horse-riding Equipment Discovered in the Study Area.....	278
29. Iron Sickles Discovered in the Study Area.....	279
30. Frequency Distribution of Utilitarian Tools and Weapons (n=429). Axes and Knives are Included as Weapons.....	284
31. Temporal Variations of the Mean of Utilitarian Tools and Weapons. Axes and Knives are Included as Weapons.....	285
32. Scattergram of the Mean Number of Weapons Through Time. Axes and Knives are not Included as Weapons.....	289
33. Scattergram of the Mean Number of Utilitarian Tools Through Time. Axes and Knives are not Included.....	291
34. Frequency Distributions of Utilitarian Tools and Weapons (n=429). Axes and Knives are Included as Utilitarian Tools.....	294
35. Temporal Variations of the Mean Number of Utilitarian Tools and Weapons. Axes and Knives are Included as Utilitarian Tools.....	295
36. Scattergram of the Mean Number of Weapon Through Time. Axes and Knives are Included as Weapons.....	296
37. Scattergram of the Mean Number of Knives and Axes Through Time.....	299
38. Temporal Variations of the Mean and Standard Deviation of Burial Volume Through Time.....	308
39. Temporal Variations of the Mean and Standard Deviation of Burial Size Through Time.....	309
40. Temporal Variations of the Mean and Standard Deviation of Jade Objects Discovered in Burials Through Time.....	313

Figure	Page
41. Temporal Variations of the Mean and Standard Deviation of Gold Discovered in Burials Through Time.....	314

CHAPTER I

INTRODUCTION

Theoretical Background

This dissertation is concerned with the formation of the Silla Kingdom, a protohistoric state located in the southeastern portion of the Korean peninsula. In particular, by combining theoretical issues with empirical data concerning state formation, I will present how one prime mover, warfare, played a major role in the formation of the Silla Kingdom, during the time between the first and fifth centuries A.D.

A great deal of research has been done by Korean and Japanese scholars on the formation of the Silla Kingdom. Most of it, however, has been concerned with static sociopolitical events than with the wide variety of dynamic historical or sociopolitical processes/mechanisms ultimately responsible for the sociopolitical development of the Silla Kingdom. As a consequence, little about the processual aspects of state formation has been demonstrated or even considered. A very critical and fundamental problem is that many Korean historians and archaeologists have shown a tendency to consider state formation, not as a result of continuous processes, but as a sudden event— something that occurred at a certain time, as commemorated by historical documents.

In conjunction with this, greater theoretical attention has been paid to

diffusion or migration (invasion) from both north China (including Manchuria) and the Siberian region which had highly developed civilizations. This would lead to the conclusion that outside contacts were the prime cause of culture change leading eventually to state formation in the Korean peninsula. The "horserider theory" of state formation through conquest by nomadic peoples, formulated by the Japanese prehistorian Egami (1967), is an extreme example of these theories, some of which continue to receive support in slightly modified versions (Kiley 1973; Ledyard 1975). According to Egami (1967) who proposed the "horserider theory" in conjunction with the emergence of state-level society in Japan as follows:

...Horseriders of Nomadic people(s) in northeast Asia, armed with newly developed weapons and horses, penetrated into the Korean peninsula, then probably invaded either northern Kyushu or western edge of Honshu. Around the end of the fourth century A.D., they advanced to the Kinai region and established a strongly centralized Yamato Court which made a critical contribution to the achievement of the state-level society in Japan [Egami 1967:173; translated by the author].

Although many scholars have expressed skepticism about the "horserider theory" in relation to the formation of states in both prehistoric/protohistoric Korea and Japan (Aikens and Higuchi 1982:336; Barnes 1988:16-24; Nakawa-Smith 1980:144, 1990:65; Kim, J. B. 1986:99-140; Kirkland 1981), a few Korean prehistorians continue to support the rather speculative "horserider theory" in one way or another on the basis of fragmentary archaeological evidence (Choi, B. H. 1992:397-415, 1993a:332; Shin 1992:164-167).

The possibility of migration or invasion of peoples throughout time is

not entirely ruled out in this dissertation as a causative factor of state formation, and indeed population movements from both China and Manchuria to the Korean peninsula are well documented in the historical records. But the "horserider theory" of state formation in conjunction with culture change in the Korean peninsula cannot be supported by current archaeological and historical perspectives, as will be discussed below. Some stylistic similarities in terms of mortuary practices and artifacts between Scytho-Siberian, North Chinese culture, and Korean culture, may indicate some validity for the theory of migrations. But such phenomena of similarity, can also arise from diffusion or mutual interaction (i.e., long-distance exchange), or coincidentally as a result of independent local indigenous development, or even from combinations of all of these factors simultaneously.

My research focuses on a processual view of state formation. This does not seek to deny the importance of historically recorded events and contacts but rather to place them in the context of an unfolding process that may be documented through the combined use of both ethnohistorical and archaeological records. There is much in the emerging archaeological data base to show a continuous development from lower-level sociopolitical stages (i.e., tribes or chiefdoms) to higher-level ones (i.e., kingdoms or states) in southern Korea, finally dominated by the historical Silla Kingdom. While taking into account the important roles of diffusion and migration as mechanisms for culture change, research emphasis will be shifted to the generally neglected topic of local indigenous development in the study area.

The emergence of state societies in many parts of the world has been of

major interest to both anthropologists and archaeologists. Some early and widely recognized theories emphasize causal roles for irrigation agriculture (Wittfogel 1957), warfare (Carneiro 1970), and long-distance exchange (Rathje 1971, 1972; Sanders 1968; Sanders and Price 1968; Wright 1969; Wright and Johnson 1975). These are generally known as "prime mover" paradigms or mono-causal models. Archaeologists, perhaps stimulated by Adams' (1966) early work, later realized that one specific theory cannot explain the emergence of the state throughout the many world regions where it appeared.

Thus, archaeologists have developed an alternative approach. They have emphasized the complexity of state formation processes denying the mono-causal model and stressing the importance of multivariate causative factors in fostering state formation (Brumfiel 1983, 1992; Conrad 1981; Flannery 1972; Redman 1978; Sanders and Webster 1978; Yoffee 1979). During the last decade, the multivariate causative factor hypothesis, in conjunction with a systemic perspective, has become the dominant approach to explanation of the emergence of complex societies.

On a worldwide level, however, multivariate models concerning state formation do not seem to have offered clear answers to all questions either. Because they have paid too much attention to finding "universal laws," they have not taken into consideration the importance of unique micro-environmental conditions as well as the long term historical context of a given area under investigation. Some variables of the multivariate model may have been operative in a given case, but other variables may have not even been there or their roles may have been negligible even if they were found in a given area. As a consequence, there is no general consensus

concerning theoretical models which satisfactorily explain the formation of the state.

One theory may work for a particular region, but the same theory does not necessarily work for other parts of the world, due to many different natural environmental conditions and diverse socio-cultural circumstances. For instance, the long-distance exchange model may have worked in Mesoamerica and Mesopotamia, but the same theory may not work in Korea, as will be shown later.

Thus, the origin of the state is a problem to be addressed case-by-case and region-by-region. For example, no matter how nicely the multiple causative model fits with the overall archaeological context, it would be misleading to blindly adopt the theory to explain state formation without considering unique historical contexts of the prehistoric societies under study. Therefore, we do not necessarily have to automatically reject the "prime mover" theories to follow a specific popular research trend. According to Carneiro (1981):

It is certainly true that most theorists nowadays have only harsh words to say about "monocausal" theories. I do not share this prejudice. There is nothing wrong with a monocausal theory if it works...If a single cause can explain a phenomenon, so much better. Of course, if one factor is not enough, then we increase the number of causal factors in our theory until our explanation becomes satisfactory. We may well end with multiple causation, but a multiplicity of causes, if it comes to that, should be thought of as necessity, not a virtue [Carneiro 1981:55].

In summary, the more important issue we should keep in mind is not to concern ourselves too much about whether "monocausal" or "multicausal" theories are deemed most useful to explain the particular case

under investigation; rather, we should be concerned about which theory is the most appropriate under a given the environmental, cultural, and historical contexts. Different causative elements work at different times and in different places; therefore, one causative factor may explain state developments at a single time and place, but it is highly unlikely that the same set of factors may have occurred under different circumstances.

Formulation of Hypotheses

The significance of warfare in the emergence of the state has long been recognized, and a number of scholars have devoted research to this subject. Unfortunately, however, most of the research stemming from the Western archaeological tradition so far focuses on theoretical concerns rather than substantive ones. Few researchers have utilized much empirical archaeological data (e.g., weapons, armor, fortifications, or mutilated bodies) in the foundation of their theories concerning warfare in association with state formation.

Meanwhile, in oriental countries (e.g., China, Japan, and Korea), an abundant amount of research by national scholars has focused intensively on substantive warfare data (i.e., weapons, defensive structures). In exhaustively and minutely describing the typology or technological aspects of individual warfare artifacts (i.e., arrowheads, axes, armor, helmets, swords, spearheads, and daggers) they aim primarily at establishing cultural chronologies. However, these scholars have not taken full advantage of the empirical data to extend their interests to cultural process and concerns about the sociopolitical development of the state. My research seeks to combine the

theoretical sophistication of the Western archaeological research tradition with the intense concern and respect accorded to the empirical data base by scholars of the Oriental archaeological research tradition.

I believe that protohistoric Korea had a distinctive and unique socio-cultural environment. Cultural development on the Korean peninsula should be explained not only from generalized, but also from particularized points of view. According to available historical documents and archaeological data, irrigation works, long-distance exchange, and warfare all existed in protohistoric Korea. Therefore, it is highly possible that in one way or another these three factors played important roles in the development of early states in Korea. Particularly, in the case of Silla, preliminary observation of the historical and archaeological data indicate that warfare seems to have been a predominant factor in the course of its development. Thus, on the basis of general background knowledge, the following hypotheses were formulated.

I

In the southern portion of the Korean peninsula, local polities that had been developing in the area made the transition from chiefdom- to state-level organization, principally by warfare culminating mainly between 300 and 500 A.D.

II

The formation of the Silla Kingdom that was achieved during this time was largely precipitated by external pressures, particularly from Baekje, Wa (ancient Japan), Gaya, Goguryo, and other states that had already formed surrounding Silla. The consolidation of the Silla Kingdom was not brought about through invasion and conquest by outside forces, however, but on the contrary, through local victory against those forces.

Research Procedures

Protohistoric polities in south Korea provide a good research field for the study of sociopolitical evolution, and especially the transition from chiefdom to state-level society. Available Chinese and Korean historical documents, with the aid of archaeological data, provide excellent research opportunity to examine the causative factors responsible for the sociopolitical transformation in the region. Chapter II discusses some definitional problems with socioevolutionary typologies encountered in the research. More specifically, the chapter is focused on the concept of "kingdom," which is an archaic form of state that has not been clearly defined by cultural evolutionists but frequently appears in the anthropological literature. The relationship between "kingdom," and "state," as more usually conceived, is important to understanding sociopolitical evolution in ancient Korea.

Chapter III summarizes the present environmental conditions, such as topography, climate, plants, animals, minerals, and soils, of the research area and its vicinity. This will help us to understand the availability of natural resources in association with the question of whether any lack of basic human needs motivated pre-/proto-historic inhabitants to establish trade networks with other peoples.

Chapter IV presents a general assessment of historiographies concerned with protohistoric Korea. First of all, this chapter is intended to demonstrate the nature of both the Chinese and Korean historical documents available for the study of sociopolitical evolution in southern Korea. By appropriately evaluating the documentary sources, it is possible to understand their

advantages and disadvantages and their value and limitations. Second of all, this review is carried out to justify how these early literary sources can be utilized for the development of archaeologically testable hypotheses about the nature, causes, and processes of local sociopolitical evolution. Thus, one of the important advantages of this research is the combination of both documentary and archaeological data. It is shown that literary sources may be treated as stepping stones for the development of arguments, or arguments of relevancy, and then it is shown how information contained in historiographies can be used in the analysis of archaeological data in the entire context of the research.

In Chapter V, reconstruction of the level of sociopolitical complexity is conducted to demonstrate that there were no state-level societies in the study area at least until the third century A.D. The determination of the complexity level of the pre-Silla Kingdom period is critical, because if there was already a state-level society in being in the area sometime between the first and third century A.D., as claimed by a few Korean scholars, the examination developed here of possible causative factors responsible for Silla state formation becomes less meaningful.

Chapter VI presents the evidence of hydraulic works and interregional exchange, to examine how much these two mechanisms made contributions in the sociopolitical development of the area. Although warfare seems to have had been a predominant factor in moving along the sociopolitical evolution, the result of this examination of two other possible causative factors will allow us to understand the significance of warfare more clearly.

Chapter VII discusses the frequency of occurrence of warfare, and

causes of wars in the course of the evolution of the Silla Kingdom, by primarily utilizing both Chinese and Korean historical documents. Particularly, it will be examined whether population growth in a geographically circumscribed area and numerous environmental stresses were closely related to the occurrence of warfare in the Silla Kingdom.

Chapter VIII consists of three parts. The first part presents a brief history of the archaeology of Silla and an overview of archaeological research conducted up until the present in the core part of Silla. In addition, some problems with Silla archaeology, especially establishing chronometric dating, are discussed in detail. The second part demonstrates the sites, the assemblages, the nature of archaeological features (i.e., burial), and the general kinds of evidence described in the research. Material evidence of warfare, excavated from over 400 protohistoric burials in southern Korea, is examined in detail. More specifically, over 2500 metal weapons and 760 metal utilitarian or ceremonial artifacts were examined to construct an overview of intense and violent interregional socioenvironmental circumstances in the Silla area from the first to fifth centuries A.D. From this empirical data base, the role of warfare in the formation of the Silla Kingdom is observed and evaluated from the perspective of analyses of warfare recorded in the historical documents. Finally, in the third part of the chapter, I presented an approximate chronology of the emergence of state-level society in the Silla area, based upon a combination of the results of mortuary analysis and interpretation of available historiographies.

Chapter IX addresses the verification of formulated hypotheses about the role of warfare in transforming a local indigenous polity (i.e., Silla) into a

state-level society, and the legitimacy of a monocausal theory for the explanation of state formation with emphasis on historical particularism.

Paradigmatic Characteristics of the Research

Echoing the sentiments of many, Redman (1973:5) states "Archaeology is an eclectic field that encompasses varied approaches and subject matter." This may indicate that the "either/or," or "polemic," standpoint is somehow not adequate to interpret the past, since archaeologists are not able to investigate the entire range of material remains of past human behaviors at the same time, even if it is ideal to adopt the holistic point of view concerning past cultures.

It is important to have a specific theoretical framework when we investigate past cultures, whether it is culture history, processual, or post-processual. We need to adopt one of these paradigms if we wish to make sense of our interpretations of the material remains which are the major objects of our research. It should be kept in mind that every paradigm has both merits and disadvantages, and we hope that the model chosen in a particular case will take us closer to a "real" picture of the past.

Often it seems that the world of academic archaeology becomes very sensitive to contemporary theoretical fashions, which may not be desirable for the ultimate development of the discipline. For example, when New Archaeology appeared and became a dominant force during the 1960s and 1970s, many people suddenly became New Archaeologists. In one way or another, they tried stay away from culture history paradigms (i.e., traditional archaeology), which were not completely wrong except for some rather

narrow research orientations, goals, and methodologies. The paradigm transition from culture history to processual archaeology was critical in terms of the major objectives of archeology and methodology, and there is no doubt that it made the discipline robust and raised it to a higher academic level (Redman 1991:296-298). Yet, without the culture historical research background, this movement could not have succeeded. The paradigm of culture history is still important and should be treated as a starting point for addressing more sophisticated research goals.

In the early 1980s, a rather different paradigm, postprocessual archaeology, emerged in reaction to processual archaeology. Basically postprocessual archaeologists were dissatisfied with many of the assumptions and concepts adopted by processual archaeologists. First, postprocessual archaeologists believed that there was much more meaning to culture than just material "adaptation" to ecological conditions. It is true that by accepting a narrow concept of culture from an adaptive perspective or systems theory in relation to functionalism, processual archaeologists consciously and unconsciously ignored some other aspects of culture, such as the role of individual, historical context, norms of society, and the mental aspect of human culture (Hodder 1982a, 1991).

The ecosystem approach of processual archaeology excessively emphasized the importance of technology and functional adaptation to environments. By and large, this was a result of reaction to a traditional archaeological research atmosphere perceived as unscientific, and New Archaeology's adoption of a scientific way of thinking. In their investigations of prehistoric culture, New Archaeologists adopted functionalism, systems

theory, cross-cultural behavior, generalization, and Hempelian positivism (Binford 1965, 1971, 1972; Flannery 1972; Hill 1970; Plog 1975; Watson et al. 1971, 1984). More importantly, in the course of performing research tasks, processual archaeology has tightly espoused *scientism*.

As a consequence, its practitioners consciously and unconsciously avoided such phenomena of culture as belief systems, world views, symbolic meanings, and historical context, which were considered to be non-scientific, equivocal, and difficult to test scientifically (Hodder 1982a, 1982b, 1984, 1991:24; Shanks and Tilley 1987). Thus, processual archaeology's research domain became reduced and shrunken as seen by postprocessual archaeologists. Against this reduced theoretical orientation and the subject matter of research, postprocessual archaeologists developed a different theoretical background and research orientations based on the early work of Collingwood and Childe (Hodder 1982a, 1991), and on Marxism (Leone 1984; Miller and Tilley 1984; Shanks and Tilley 1982; Tilley 1981). By and large, the general issues of postprocessual archaeology concern the dichotomies between process and structure, individual and norm, ideal and material, and subject and object (Hodder 1991).

On the other hand, according to a few postprocessual archaeologists, there is no objective history or no real past (Shanks and Tilley 1987, 1992:11-12). Even if there were, they argue, it consisted of multiple pasts (Shanks and Tilley 1992:245-246, 257-258), and therefore, we are unable to know what exactly happened in the past. We are, then, encouraged to adopt interpretive pluralism (Shanks and Tilley 1987). For this reason postprocessual archaeology is often called postpositivism (Preucel 1991:17-20).

Postprocessual archaeologists have made contributions to the development of anthropological archaeology in relation to the issues of epistemology, different aspects of culture, concerns of human individuals and their ideas and perceptions, meanings, unique historical context, and fundamental attitude about scientism (Hodder 1982a, 1982b, 1984, 1987, 1991). Yet, postprocessual archaeology is not flawless. Postprocessual archaeologists either reject a replicable and verifiable methodology or do not have adequate methodological tools to test their ideas (Bell 1991; Earle and Preucel 1987:509-510, but see Earle and Preucel 1987:517 for Hodder's reaction).

Today many archaeologists confront some kind of theoretical turmoil. Yet contemporary archaeologists should keep in mind that, no matter what paradigms we adopt, our ultimate goal, to study past human societies, should remain intact. While we spend much time arguing about the adequacy of a certain paradigm, we might lose sight of the forest for the trees (cf. Watson 1986:452-453). Adopting appropriate theories and methods for the study of the past is critical indeed, but it should not be treated as an end in itself, only as a means. In this sense, it is important to remember that it is not sufficient to do archaeology one without another (cf. Ferrie 1995:312).

For example, as claimed by some postprocessual archaeologists, there may be no objective past; they say we are not able to know the past, and we do not know if we are right or wrong about what we are doing. Yet, somehow the new paradigm is convincing. Meanwhile, we should realize that we already know much about what happened in the past in terms of people and other aspects of nature in general (cf. Hill 1991:46-49). Historical knowledge is accumulating as time progresses. This is true for all academic disciplines.

However, once we become too pessimistic about what we can know about the past, we will know little indeed. As a matter of fact, we do not even know what factors play the most critical role in contemporary society as it is or how it works. My reaction to the postprocessualists' claim that there is no real past is that although we do not exactly know what happened in the past, if we adopt an appropriate theoretical framework, armed with sound methodologies, we should be able to move closer to a real picture of the past. Besides, we do not wish to know every single bit of trivial repetitive past human behavior, even if it is part of the total human history. I believe that the evaluation of what we know, or how we know, the human past depends largely on our research question and relevant research design.

Certainly, time must be devoted to establishing a sound epistemology— "how we know what we know." But we should not spend too much time on "how do we know we know," since we already know a lot about our past (see Hill 1991). The important issue is that there is still unknown and unwritten human history out there. Therefore, we should be concerned about what and why we do not know about the past. Furthermore, we need to keep asking questions about how we will figure out what we do not yet know of the past, and how we should be able to formulate efficient theories and methodologies to appropriately approach the past. For instance, there is a big difference between our knowledge of chronology before the invention of C-14 dating and after the invention of C-14 dating, or computers, or other kinds of highly developed scientific instrumentation. Some old theories/hypotheses proved to be wrong and others proved to be right (e.g., Watson et al. 1984:53-58). This is the very nature of science.

In this sense, I strongly support positivism. The fundamental assumptions made for this research are as follows:

...[T]here is a real, knowable world that can be empirically perceived and described and ... the empirically observable behavior of the entities making up this real world is orderly. The behavior of the phenomena in the real world is often complex and seemingly random or haphazard, but ...regular patterns are present in natural phenomena and ... these patterns can be observed and described [Watson, LeBlanc, and Redman 1984:3].

Yet, "Facts do not speak for themselves, and even if we had complete living floors from the beginning of the Pleistocene through the rise of urban centers, such data would tell us nothing about cultural process or past lifeways unless we asked the appropriate questions" (Binford 1968:13). This is a very important premise that must be addressed before we begin our research, because "facts are selected and that research must be problem oriented," and "facts only answer the questions that the archaeologist asks of them" (Shanks and Tilley 1987:9). In this sense, I will follow the positivistic epistemology and hypothetico-deductive methodology adopted by processual archaeologists rather than the postprocessual archaeologists' pessimistic attitude or relativistic tendencies toward the human past that deny particular historical and cultural dimensions of activity (see Hodder 1982).

A formal acceptance of plural interpretations is an adequate solution to the questions we encounter concerning past human history, and it is possible to look at the same past culture and histories from a wide range of angles with different epistemologies and theoretical schemes. However, that kind of research trend sounds like an expedient tool to avoid the real problem encountered, or a superficial excuse to avoid the problem. The outcome of

my research does not represent the objective history of ancient Korea. But by adopting a plausible theory of "warfare" derived from extant old Korean historical documents, and by selecting and analyzing the relevant variables of "weapons" deposited in burials as mortuary offerings, my research will make some general contributions toward the understanding of Korean objective pre/proto-history in terms of the formation of complex societies (Chapters VII and VIII). I have no desire to argue that my research is absolutely correct. Rather, I collected some relevant archaeological data available in my study area, analyzed them, and interpreted them based upon the result of analysis with my anthropological or historical perspectives (Chapter VIII). Eventually, I hope that this type of research will allow us to take one step closer to understanding real-world objective history as defined by postprocessual archaeologists (Shanks and Tilley 1987). I also hope that sometime later other researchers equipped with more elegant and sophisticated paradigms, theories, or methodologies will reexamine the validity of my arguments to pursue a more realistic view of prehistory in the study area and ancient Korean archaeology in general.

There is no one single paradigm that is deemed best for the study of the past. We should treat the three paradigms (i.e., culture history, processual archaeology, and post-processual archaeology) with equal weight. The three should be supplementary and complementary rather than treated as isolated or invalidated paradigms. In this dissertation, therefore, all three paradigms are treated equally. More importantly, although this dissertation fundamentally stems from the impetus of processual archaeology in terms of logical development and methodological approach by adopting some of the

advanced theoretical and methodological approaches available, there is no overemphasis on the importance of the theoretical position of processual archaeology. Thus, this research attempts to avoid mechanically adopting processual archaeology's point of view concerning culture change via such variables as environmental change, adaptation, population growth, and technological innovation.

CHAPTER II

THE CONCEPT AND DEFINITION OF THE STATE: ALTERNATIVE FORMULATIONS

Introduction

The socioevolutionary typology adopted as a reference point in this dissertation includes the concepts of band, tribe, chiefdom, and state as formulated by Service (1962). Since, the majority, if not all, of Korean archaeologists and historians have widely used these terms, I feel that it is important to build on what is already in use, rather than trying some totally different approach. Although sometimes these sociopolitical typological designations do not fully account for the range of organizational variation, they are still useful in the study of the development of past societies. It is, however, necessary to discuss some of the disadvantages and difficulties encountered when classifying a wide range of societies into these four sociopolitical categories. Thus, many scholars have questioned the validity of such typologies (Dunnell 1980; Feinman and Neitzel 1984; Hodder 1991; Shanks and Tilley 1987:146-151; Spencer 1987; Upham 1987). At the same time, all concepts and definitions of societal types have come under examination by many archaeologists (Feinman and Neitzel 1984; Flannery 1976; Greber 1979; Plog and Upham 1983; Steponaitis 1978; Upham 1982, 1987). Some scholars, unsatisfied with those conventional sociopolitical typologies,

either created alternative terms or added a few sub-types. For example, new terms such as "middle-range" societies or "intermediate-level" societies have replaced the conventional term, "chiefdom." (Feinman and Neitzel 1984; Upham 1987) These authors argue that the conventional concept of chiefdom spans too broad a range of variation to be useful, and that the new term is more accurate and more useful (Upham 1987). Other scholars have divided chiefdoms into two or three types: 'simple chiefdoms' and 'complex chiefdoms' (Steponaitis 1978:420) or 'minimal-, typical-, and maximal-chiefdoms' (Carneiro 1981:47). It should be recognized, however, that these are all basically variations of the chiefdom concept, rather than radically new approaches. Thus even these critics of the typological approach have not really found a fundamentally better way. In this research, as far as the term 'chiefdom' is concerned, the conventional definition will be adopted as adequate to present purposes, because I am not primarily concerned with chiefdoms, but rather with state level society.

Although the conventional term 'state' has been widely accepted, the concept has some ambiguities stemming from the many different forms that states might take (e.g., city-states, walled-town states). As Claessen and Skalník (1978a:22) point out, "the degree of complexity, the extent of the territory, the size of the population, and the degree of power of the central government may differ considerably" among many early states. Therefore, attempts have been made to redefine the evolutionary typology of state into two or three different types: 'the decentralized stratified society' or 'centralized archaic state' (Kristiansen 1991) or 'the inchoate-, the typical-, and the transitional-early state' (Claessen and Skalník 1978a, 1978b). By

elaborating the typology, theorists have attempted to differentiate the incipient state from the full-blown state, with some success

Another problem raised with the state concept is that some of its major criteria are considered inadequate to explain evolutionary trajectories in real historical situations. For instance, Flannery (1972:403) states that "a professional ruling class was separated from the bonds of kinship relationship." This has been widely accepted as one of the important criteria in distinguishing chiefdoms from states (Tainter 1988:26). But this criterion is violated in many historic countries, where hereditary political succession has obviously been practiced for a very long time. This problem is closely related to the current research, since hereditary succession to the kingship was practiced from the emergence of the Silla Kingdom to its collapse. In particular, as shall be shown below, the establishment of a hereditary kingship succession has been a critical indicator of the emergence of a strong centralized government in the area under examination (see Chapter VII).

In this chapter, therefore, to find an appropriate term to deal with this circumstance in association with the explanation of sociopolitical evolution in the study area, the conventional concept and definition of state will be re-examined. Then, the historically specific term "kingdom" will be reviewed to examine its usefulness within a conventional socioevolutionary typology.

Definition of Socioevolutionary Types

Sociopolitical typologies, together with cultural evolutionism, have been criticized by both "processual" and "post-processual" archaeologists. It has, for instance, been noted that little interpretative attention has been paid

to the transition from one type of sociopolitical organization to another (Hill and Evans 1972:267; Upham 1990:5), and it is difficult to monitor either variation within types or subsequent evolutionary changes between types (Plog and Upham 1983:200; Tainter 1977:330-331; Upham 1990:5). In addition to these criticisms, sociopolitical typology itself needs to be treated as a continuous rather than a nominal variable (Tainter 1988:29; Upham 1987:345). In the past, some archaeologists simply attempted to identify or label appropriate typological designations for ancient societies according to lists of diagnostic traits designed by early cultural evolutionists. Consequently, evolutionary typologies have been occasionally linked to "checklist archaeology" (Kristiansen 1984:72; Tainter 1977:330). As Service (1975:304) pointed out, it is difficult in specific cases to make clear distinctions between 'discrete' stages. The result, ironically, is that Service (1975:304) himself becomes suspicious about the usefulness of such classifications for prehistoric archaeology. He, especially, states that

[I]t may be that the stages Band, Tribe, Chiefdom, and Primitive State probably are not true to the aboriginal state of affairs. They may be useful for a classification of modern ethnography but not useful if they are to be used in extrapolating from extant stages to extinct ages [Service 1971a:157].

Despite these expressions of skepticism, evolutionary 'types' are still valuable for the study of prehistoric cultures (Drennan and Uribe 1987; Earle 1987:280; Kristiansen 1991:16-17). We must be careful not to devalue typology; it is an important research tool, for classification is in many ways fundamental to scientific inquiry (Earle 1987:280). Archaeologists should,

however, avoid studying typology for typology's sake alone. Rather, the designation of 'types' should be a starting point for further archaeological investigation.

In sum, it remains desirable, within the parameters delineated here, to classify extinct and extant societies by some reasonable typological system, as Earle (1987) has stated:

Because societies at different scales confront different organizational problems and possess different properties and dynamics, such typologies are fundamental to selecting appropriate cases for comparison [1987:280].

With this background in mind, I review the conventional concepts and definitions of chiefdom and state, and examine the potential usage of "kingdom" as an intermediate sociopolitical stage between chiefdom and state-level societies.

Problems with Terminology

Both anthropologists and archaeologists have utilized Service's (1962, 1975) four general categories: band, tribe, chiefdom, state. Every archaeologist should be familiar with the basic concept and definition of each type. Curiously, the concept and definition of 'kingdom' has been largely excluded from the anthropological and archaeological literature, although it is widely used by historians. Perhaps the lack of attention given this term has been caused partly by the work of the cultural evolutionists (Fried 1967; Oberg 1955; Sahlins 1961; Service 1962, 1975). That is, when generating categories of sociopolitical typology, they did not take into consideration the concept of

'kingdom' in conjunction with the context of 'dynasty.' This research trend has continued without any further investigation.

In the last two decades, however, we frequently encounter the terms 'kingdom' and 'king' in much literature. Indeed, many anthropologists and archaeologists habitually use the words 'king' and 'kingdom,' in their presentations, without clarifying their meanings in the historical context in general. A few examples will illustrate this point:

Azcapotzalco's hegemony was founded on an unstable complex of payoffs and alliances similar to those in the earlier *petty kingdoms*, and its power soon disintegrated....Because so many high-ranking nobles had died almost simultaneously, throwing *kingdom* after *kingdom* into disputes over succession [Brumfiel 1983:271-273; emphasis added].

The central focus of the Shang civilization as it manifests itself in the An-yang data is the *King*. The history of the Shang as recorded in Shih chi is in fact the history of its *kings* and the oracle inscriptions recorded the *king's* divinations almost exclusively [Chang 1980:158; emphasis added].

Much beyond the political sphere of the *Shang kingdom*, regional cultures began to use bronze for weapons and other objects, especially those used for ritual purposes [Hsu and Linduff 1988:26; emphasis added].

...the upkeep of the dead *king's* household and private property tied up so many of the assets of the *kingdom* of Chimor that the reign of the succeeding king was forced to concentrate on conquering new territories [Paulsen 1981:33; emphasis added].

Countless scholars use the term 'kingdom' without delimiting the underlying concept. So, it is difficult to grasp precisely what is referred to

when this term is encountered. 'Sometimes, 'kingdom' appears to be nearly interchangeable with 'state.' For example,

The Shang *kingship* may be characterized as an institution that had two major elements: first, it occupied the top of a vast *state* structure that served as the center of a centripetal economy and rested upon legitimate force and explicit law; second, it lay at the core of a vast *kingship* organization, based on actual and legendary blood relations and coupled with the *state* structure [Chang 1980:158; emphasis added]

The Shang *state* incorporated the area of the modern provinces of Honan and some parts of Hopei, Shantung, and Anhui....Much beyond the political sphere of the *Shang kingdom*, regional cultures began to use bronze for weapons and other objects [Hsu and Linduff 1988:26; emphasis added].

Just as in those *states* to which Ortner refers, in the archaic *states* of northwest Europe--including the Germanic proto-*states*² of the first century A.D., the Germanic barbaric *kingdoms* of the fifth through the eighth centuries, the Anglo-Saxon *kingdoms* of the seventh through the eleventh centuries, ...--there was an emphasis in varying degrees on the "purity" of women [Muller 1987:81; emphasis added].

Inca policies which led to the incorporation of existing societies into the state transformed them into new political entities. Large *states*, like the *kingdom* of Chimor, were broken into smaller political units [Patterson 1987:122; emphasis added].

At other times 'kingdom' is treated as an intermediate stage, falling between chiefdom and empire or state. A somewhat larger political organization than chiefdom is consequently implied:

The intensification of competition within and between *petty kingdoms* was crucial to the entire process of Aztec *state formation* [Brumfiel 1983:276; emphasis added].

The forging of villages into chiefdoms and of chiefdoms into *kingdoms*, therefore, occurs only through coercion, especially by conquest warfare [Carneiro 1972:65; emphasis added].

Before A.D. 1408, the traditional date for the beginning of imperial expansion, Inca leaders governed only a small, *rustic kingdom* in the area around their capital, Cuzco in the southern Peruvian highlands [Conrad 1981:5; emphasis added].

Chiefs and *kings* set themselves apart from the agrarian substrait [sic.] and rule through a retinue of warriors. Freed from kinship obligations, the warrior chiefs and *king* control, undermine, and exploit the farming communities through tribute and taxation [Kristiansen 1991:19; emphasis added].

...central to the new social form of stratification must be formalized ways to extract tribute, tax, and labor. This income then can support territorial conquest to create the larger polities of *kingdoms* [Kristiansen 1991:20; emphasis added].

Even in Service's original cultural evolutionary typology, we see the terms 'kingdom' and 'state' used without clarification (e.g., Nyoro kingdom, Puapula kingdom, Yaka kingdom, the Ashanti state, the Zulu state [Service 1975]). Therefore, the concept of 'kingdom' remains ambiguous, causing frequent conceptual and definitional confusion. The term 'empire' is also problematic in this context. Indeed, it is of interest to note that a few archaeologists have even been using the term 'nation-state' to make a distinction between primitive states and full-fledged states (Anderson 1994:61; Barnes 1986:82; Cherry 1986:19; Johnson and Earle 1987:Table 1, 272-320; Renfrew 1986:2-4). Although a detailed study of this latter problem is beyond the scope of my paper, a brief explanation of the term "empire" will be offered later. To dispel some of the ambiguity just noted, it is necessary to assess the

term "kingdom," propose a plausible definition for the term, and place that sociopolitical stage in its appropriate position.

Problems with the Conventional Definition of "State"

The rule of hereditary succession has been regarded as one of the more important criteria distinguishing chiefdom from state-level societies. In egalitarian societies, status generally is not ascribed but achieved. That is to say, the status of the individual is generally determined by age and sex and one's individual abilities (e.g., hunting, story-telling, etc.). In general, there is no hereditary succession in band and tribal societies, since political power and leadership cannot be transferred from one generation to the next in an egalitarian society (Lewellen 1983:74). In a chiefdom, however, status is ascribed: men or women are either of 'noble' or 'commoner' descent from birth, regardless of their individual capabilities. Political power and economic prestige is almost entirely hereditary from one generation to the next (Lewellen 1983:75).

In state-level societies, however, the diagnostic criteria for hereditary succession have been viewed differently. Fried (1960:728) described the diagnostic characteristic of a structurally complex system as the "organization of society on a supra-kin basis." He went on to argue that the transition from a stratified society to a state level society was closely related to a transition from kinship-based to non-kinship-based systems of organization (Fried 1967:224-226). Flannery also emphasized this point:

The state is a type of very strong, usually highly centralized government, with a professional ruling class, largely *divorced from the*

bonds of kinship which characterize simpler societies. It is highly stratified and extremely diversified internally, with residential patterns often based on *occupational specialization rather than blood or affinal relationships* [Flannery 1972:403-404; emphasis added].

According to this definition, in state-level societies, a professional bureaucrat's political prestige cannot be transmitted through generations according to the lineage relationship. In other words, political ranks are not ascribed but achieved, and they must be considered substantially 'separated' from the rule of kinship-based hereditary succession. To support his argument, Flannery (1972:Figure 1) lists several archaeological examples: Classic Mesoamerica, Sumer, Shang China, and Imperial Rome; and ethnographic examples: France, England, India, and the U.S.A. Flannery's definition of the state, and his examples, have been widely accepted and employed by anthropologists and archaeologists.

His definition is still acceptable today, with the exception of two points. First, there must be a clear distinction between pre-industrial and industrial societies in state-level sociopolitical systems. Second, and more importantly, separation from the hereditary rule of succession as the key element differentiating state level society needs to be reconsidered in light of ethnohistorical and archaeological records. Among other things, a great many ancient complex and centralized state-level societies do not fit Flannery's definition of the state in terms of the rule of hereditary succession. That is, the rule of hereditary succession for the political ruling class, and in particular for the kingship, was not distinct, or separated from a lineal kinship relationship. In a great number of so called early state-level societies, both in the Old World and in the New, this seems to have been the case.

The rule of hereditary succession is much more complicated than most anthropological models suggest (Burling 1974; Goody 1966). In many protohistoric and historic state-level societies, it is not just kingship that is restricted to unilineal royal descent, but also endogamous marriage was practiced in royal families to keep royal lineage blood-lines pure, and to avoid the diffusion and dissolution of political power (Chang 1980:178-179; Service 1962:162). Historically, in many state-level societies, hereditary kingship from one generation to the next was taken for granted. According to Lewellen, "Political succession in chiefdoms and early states is almost invariably hereditary, which simply reflects the emphasis on kinship, especially unilineal kinship, at this mid-level in political complexity. In fact, unilineal kinship systems can be seen as the foundation upon which centralized societies are originally constructed" (Lewellen 1983:75). Service (1975:212) accepted this idea "...since our comparative study of the ethnologically known states and chiefdoms has shown the probable universality and the functional utility of what we call *ramages*, forms of kinship that involve the institutionalization of inequality by heredity" (emphasis in original).

Indeed, there are a number of ethnohistorical and archaeological examples of such hereditary succession. Eckert et al. (1990) provide an ethnohistorical example from Korea:

The period of the Three Kingdoms [in Korea] was an age in which an extremely limited number of aristocratic lineages consolidated their dominant positions over their respective societies. Power in each of the three societies was concentrated in those who lived in the kingdom's capital, and among these it was the aristocratic families, headed by the lineages of the kings and queens, that dominated the rigid and hereditary social status systems and occupied a position of

primacy in the political, economic, and cultural spheres [Eckert et al. 1990:32].

This quote shows that hereditary succession was not confined to the royal family. Even the high professional ruling classes, although not quite 'royal,' possessed a strong system of hereditary political and economic prestige. According to Anderson (1974:435), many high government officials in the ancient orient were selected "by hereditary [principles] rather than examination." In ancient China and Korea, however, there were sophisticated 'open competition' examination systems for selecting government officials. It was generally true, nevertheless, that descendants of aristocrats had special privileges over commoners in the process of being selected as government officials. In fact, this phenomenon was not confined to oriental societies. Many European countries were not yet free from the practice of hereditary succession in terms of access to political and economic prestige until the end of the eighteenth century.

Therefore, it is premature to assess the sociopolitical level of a society according to the presence or absence of kinship-based hereditary succession. According to Haas (1982:54),

It might be 'improbable' or 'unlikely' that a state organized along kin lines could exist on a permanent basis, but there are no priori reasons why such a society could not exist. Furthermore, in an analysis of the process of political evolution, it would seem counterproductive to exclude by definition all kin-based societies from treatment as states [1982:54].

Yoffee (1979:15) has pointed out that the bonds of kinship, in a strict sense, exist even within highly centralized political societies. Flannery's

definition of the state, then, is misleading. Chang (1980:363) also recognizes certain classificatory problems with this definition of the state, pointing out that the replacement of blood bonds in state organization is not applicable to the Shang dynasty of ancient China. Kingship here was at the most critical part, based on blood relationship, in a vast kinship organization. Chang (1980) suggests two possible solutions: the Shang were an exceptional case of state-level society; or the interrelationship of blood and territorial bonds in the state definition should be reassessed.

Neither of these solutions is acceptable. First, if we consider separation of the lineal hereditary system as a key determinant of state-level society, the Shang clearly is not the only exceptional state-level society. Nearly all the European and oriental countries have practiced hereditary succession for a very long period of time. There are, therefore, too many exceptions for the Shang to be treated as an aberrant state-level society. Second, in a 'true' state-level society, not only blood bonds but also territorial bonds should be separated from the process of appointing government officials. A slightly modified version of Chang's second alternative will be adopted in this paper.

The term, 'Asiatic States,' often used by European scholars, refers to those ancient states in which the distribution of political power was based on blood relationships (e.g., Anderson 1974; Friedman 1984). This is a biased point of view (Kristiansen 1991:19), since the practice of hereditary succession is not confined to the oriental system. As stated above, it is found in most European countries until the end of the eighteenth century as well. On the other hand, Song-nai Rhee (1988), a Korean scholar, warned that if we strictly apply the separation of the bond of kinship relationship from the political

system as a key diagnostic determinant distinguishing chiefdom from state, then nearly all of the early state-level societies would have to be regarded as chiefdoms, rather than states--a conclusion that is historically inaccurate. Thus, it is necessary to reexamine the conventional definition of the state in terms of this rule of hereditary succession. Alternatively, it may be more desirable to reevaluate conventional socioevolutionary typology by adopting a new intermediate type between chiefdom and state.

The adoption of nonhereditary succession as a diagnostic feature to identify state-level society is problematic. Consequently, it might be considered desirable either to reexamine the conventional concept and definition of the state regarding blood/kinship aristocratic bonds, or to adopt a more appropriate term for these early state level societies. I believe, however, that adopting a middle course allows for a simple and fruitful combination of these two alternatives.

Searching for Solutions

Since Flannery's conventional definition of the state is still relevant to the study of early complex societies, we can build upon his basic model rather than generate an entirely new model. But we have to eliminate his exclusion of the rule of hereditary succession as a diagnostic feature of early state-level societies. As mentioned above, an overwhelming body of historical data shows that many early state-level societies practiced hereditary succession in conjunction with the allocation of political power. We cannot ignore this historical phenomenon, but merely adding the rule of hereditary succession to Flannery's concept of the state would be an insufficient solution. Taking

into consideration the historical and archaeological context, we need to consider adopting an intermediate concept.

I believe the term 'kingdom' is appropriate to designate an initial form of the state. Chiefs are heads of chiefdoms, and kings are heads of kingdoms. In 'kingdom' level societies, the rule of hereditary succession was formally adopted and practiced. As archaeological and ethnohistorical examples, we can point to the Shang, Chou, Chin, and Han through Ching dynasties in China, the Three Kingdoms (Silla, Baekje, and Goguryo) through the Yi dynasty in Korea, Yamato in Japan, and kingships of many European countries like England, Spain, Italy, France, and Germany. In particular, the Old, Middle, and New Kingdoms in ancient Egypt provide excellent examples of classic kingdoms.

Also, it may be plausible to insert another category, that of 'empire,' after 'state' (i.e., kingdom–state–empire). As a matter of fact, explicitly or implicitly the term 'empire' has been used in this way by a number of archaeologists, and it is being used to designate a more advanced form of sociopolitical organization than the 'state' (Klymyshyn 1987:98; Mackey 1987; Patterson 1987:118; Pozorski 1987:112; Schriber 1987). Generally, an 'empire' should be larger than a 'state' in all physical aspects such as territoriality and population size. An 'empire' can be composed of several kingdoms (see Service 1975:190-194 for more detailed information about the issue).

Therefore, culturally speaking, an empire may include multi-cultural characteristics, multi-ethnic groups, and be multi-lingual. The Roman, Islamic, Mughal, Han China, Inca, and Ottoman Turk Empires are good archaeological and ethnohistorical examples.

Incorporating these new types into Service's evolutionary typology, we have band, tribe, chiefdom, kingdom, state, and empire. Most of the societies conventionally treated as early states should be considered as kingdoms within this system. In turn, the rule of hereditary succession can serve as a diagnostic feature to distinguish not between chiefdom and state, but between kingdom and state or empire. Lewellen (1983:75) pointed out that, "As the state increases in complexity and requires that its administrators possess specialized knowledge and skills, kinship will be gradually overridden as the dominant force in politics." In this sense, the rule of hereditary succession still can play an important role as a diagnostic feature in discriminating 'kingdoms' from 'states.'

In my slightly modified concept of state level society, the rule of hereditary succession is formally abolished and a head and political ruling class of a state should be selected, purportedly democratically, by the people; this type of political organization may be called a 'state.' This is congruent with Flannery's (1972) definition referred to earlier and preserves that definition for future use.

Summary

It is true that the socioevolutionary sequence of chiefdom–kingdom–state–empire can still be seen as somewhat infeasible (Chang 1993, personal communication). Nevertheless, as was discussed above, a number of archaeologists and anthropologists have effectively used such socioevolutionary typologies. Such typologies still remain "the most persuasive explanatory framework in archaeology and we are probably well

advised to continue to use a refined evolutionary perspective" (Kristiansen 1991:16). As long as we study the sociopolitical development of any society of the past, there are not many choices and we cannot do much without referring to societal types. Much research has been accumulated on the study of sociopolitical evolution over the world. Although the conventional societal types have undergone some modifications and/or sophistication in terms of their terms and concepts (e.g., substitution of "middle-range society" for "chiefdom"), some terminologies such as kingdom, nation-state, and empire have been taken for granted by many archaeologists without further consideration. In this chapter I have reexamined the conventional socioevolutionary typologies, especially for 'state,' and redefined them based upon accumulated research from many parts of the world.

Particularly, for this dissertation, it is important to evaluate the term 'kingdom' in conjunction with the conventional term 'state.' They are similar, but at the same time there are important differences. As will be shown, the Silla Kingdom is a historical fact. The kin-based kingdom may be in some ways equivalent to the conventional state-level society but it may be more useful to treat it as the initial form of the state. This dissertation makes that case.

Although there is a significant difference between kingdom and state in many ways, to avoid confusion with the conventional concept of the state, the two terms will be used interchangeably in this dissertation. For instance, to discuss the emergence of highly centralized government (i.e., higher than chiefdom) in a broad sense, in connection with many theories, the term 'state' will be used. But to designate a specific political organization that

existed in the Korean peninsula, either 'kingdom' or 'dynasty' must be used (e.g., Three Kingdoms – Goguryo Kingdom, Baekje Kingdom, and Silla Kingdom). Thus, for the most part, whenever 'state' is mentioned in the text it will refer to the "kingdom" level, but at times the broader level of meaning will be implied. The context of the discussion should make this clear.

CHAPTER III

THE ENVIRONMENTAL SETTING

Introduction

Although this dissertation is not primarily concerned with ecological research, by closely looking at the general environmental information available in the study area, I will extract some critical causative factors conducive to culture change which took place in the study area. This will aid in understanding the role of ecological factors in the course of the formation of the state in the study area.

The study of human adaptability provides an integrating framework for the study of the interactions between human populations and their environments. Although the importance of the relationship between physical environment and human beings in terms of sociocultural development had been noted long before New Archaeology appeared (e.g., Huntington 1915; Ratzel 1899, cited in Thomas 1925:78-80; Spencer 1969), it was New Archaeology that rigorously practiced ecologically oriented archaeology in conjunction with the concept of a systemic view of culture (Watson, LeBlanc, and Redman 1984:113-117).

Ecology is defined as "the study of entire assemblages of living organisms and their physical milieus, which together constitute integrated systems" (Anderson 1973:182). This has become a very important

subdiscipline of archaeology and anthropology in general (Butzer 1982; Hardesty 1980, Jochim 1979; Watson, LeBlanc, and Redman 1971, 1984). From its beginning, New Archaeology placed a heavy emphasis on the importance of ecology for the study of past human societies and considered culture to be part of an ecosystem. In particular, by adopting Leslie White's (1959:8) definition of culture as an extrasomatic means of adaptation (Binford 1965:205, 1972:198), New Archaeologists have paid close attention to the interactions between human beings and their surrounding environment in association with the perspective of functionalism. New Archaeology, often called 'processual' archaeology, has been criticized because of its naiveté and what some 'postprocessual' archaeologists have called its reductionist approach, in terms of an 'adaptive perspective' on culture (Hodder 1991:4). Yet, it should be acknowledged that ecologically oriented research designs in conjunction with systems theory have had a great influence on imposing our understanding past human societies from a bigger perspective.

In particular, by "shift[ing] major research efforts away from an emphasis on entities and toward a concern with relations" (Watson, LeBlanc, and Redman 1984:113), while considering many variables simultaneously, New Archaeologists have attempted to reconstruct not only culture history, but past human lifeways and eventually the mechanisms (processes) responsible for change in entire cultural systems (Binford 1968:8-16). Many archaeologists, who had been discontent with the traditional culture history paradigm, shifted their research concern from artifacts to people and ultimately to systems. Processual archaeology has been quite successful, having made a critical contribution to the development of archaeology.

However, it should be kept in mind that the culture history research orientation is not necessarily wrong, and we are unable to pursue processual archaeology without background knowledge of culture history. The rather limited research domain of culture history is not appropriate, however, to answer major questions about dynamic past human behaviors and culture processes.

The movement of research emphasis from 'artifacts or features' to 'relations' and 'systems' demands that archaeologists obtain a set of data to which few had paid attention in the past (cf. Taylor 1948). Those data are primarily concerned with physical geography, climate, soil, faunal and floral remains (i.e., ecofacts), geology, and different elements of the same artifact. In addition, in order to efficiently analyze those new categories or elements of artifacts and ecofacts, it was necessary to adopt different methodologies, such as quantitative analysis by aid of computers, and other advanced techniques of the natural sciences. In sum, ecologically oriented research has entered the mainstream of contemporary archaeology.

Brief Description of Geography and Ecology of the Study Area

In this section, general ecological information concerning the Nakdong basin, which contains the specific study area of Gyungju basin and many other archaeological sites dealt with in this dissertation, will be briefly described. Fundamentally, the development of the Silla Kingdom was closely related to obtaining and controlling the Nakdong basin as its territory, which became the heartland of the Silla Kingdom in terms of the source of its economy as time progressed (Figure 1). This process, in which the Silla

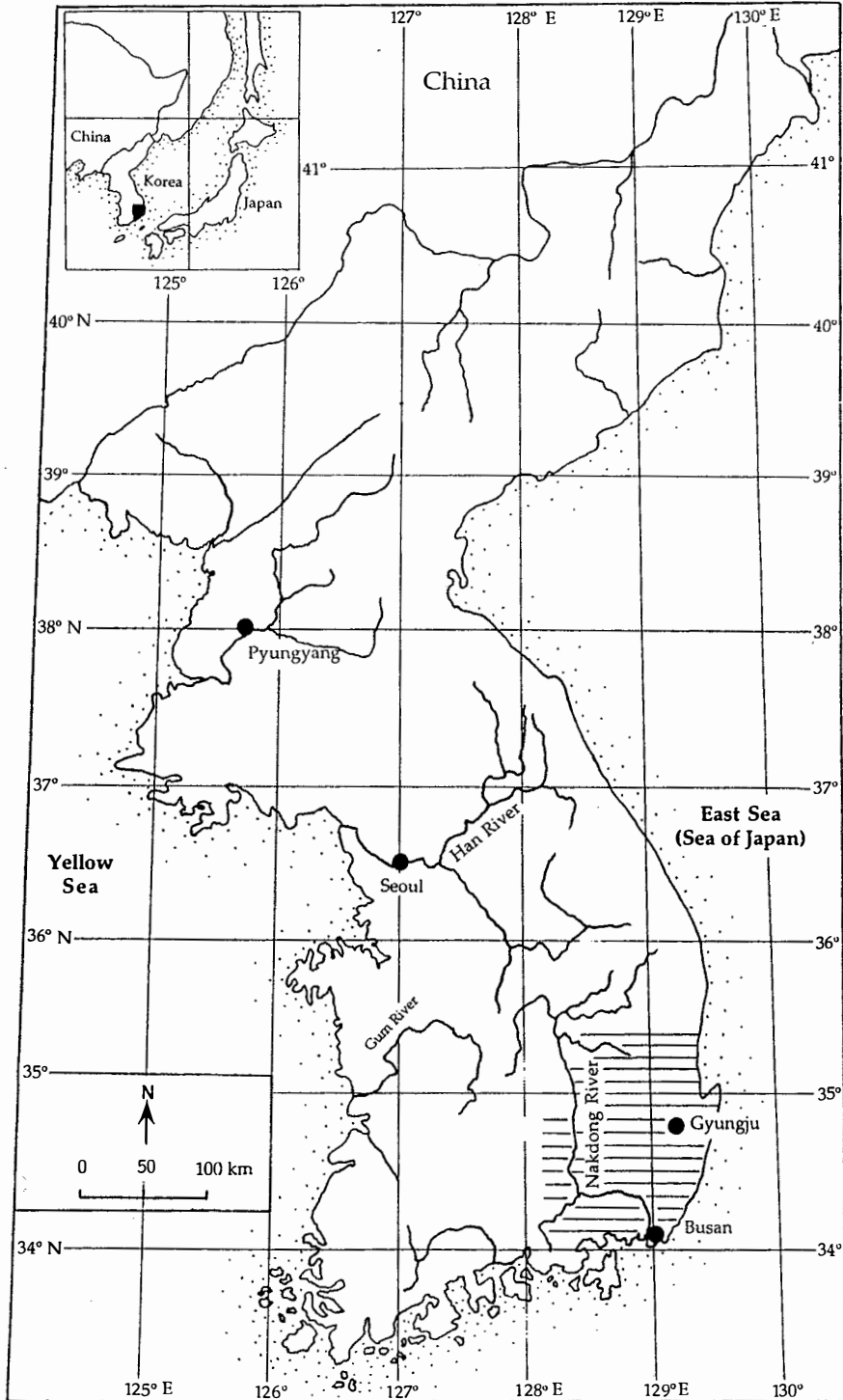


Figure 1. Map of the study area in south Korea.

Kingdom expanded its territory and came to control the Nakdong basin, is one of the most important issues in this dissertation. Therefore, an account of the ecological setting of the Nakdong basin will help to understand the overall historical context. Furthermore, more detailed contemporary ecological information concerning the Gyungju basin, in which the capital of the Silla Kingdom (i.e., Gyungju) was located, also will briefly be illustrated below.

The Nakdong basin is located in the southeastern Korean peninsula and almost the entire basin lies in between 35° and 37° north latitude (Figure 2). The Nakdong basin consists for the most part of Cretaceous or Mesozoic sediments, which are characterized by the thick rock sequences of the Gyungsang system. The Gyungsang system of the Nakdong basin is divided into the Nakdong, Silla, and Bulguksa series, which are old geologic series in the North Korean system (Jung 1984:Table I-2-1). The Nakdong, the first series of the Gyungsang system, mainly consists of shales, bituminous clays, sandstones, graywackes, quartzites, and conglomerates (Lautensach 1988:330). The Silla series is primarily the same as the Nakdong, composed of sedimentary rocks and some igneous rocks such as andesite, basalt, and tuff flows. It is reported that natural copper in basalt has been identified in Youngyang, located in North Gyungsang Province (Jung 1984:8). The Bulguksa series, the last of the system, is almost entirely composed of granite produced by frequent volcanic activities at the end of the Cretaceous (Jung 1984:8; Lautensach 1988:331). It is generally known that the Bulguksa granite intruded into the two older series of the Gyungsang system in the Nakdong

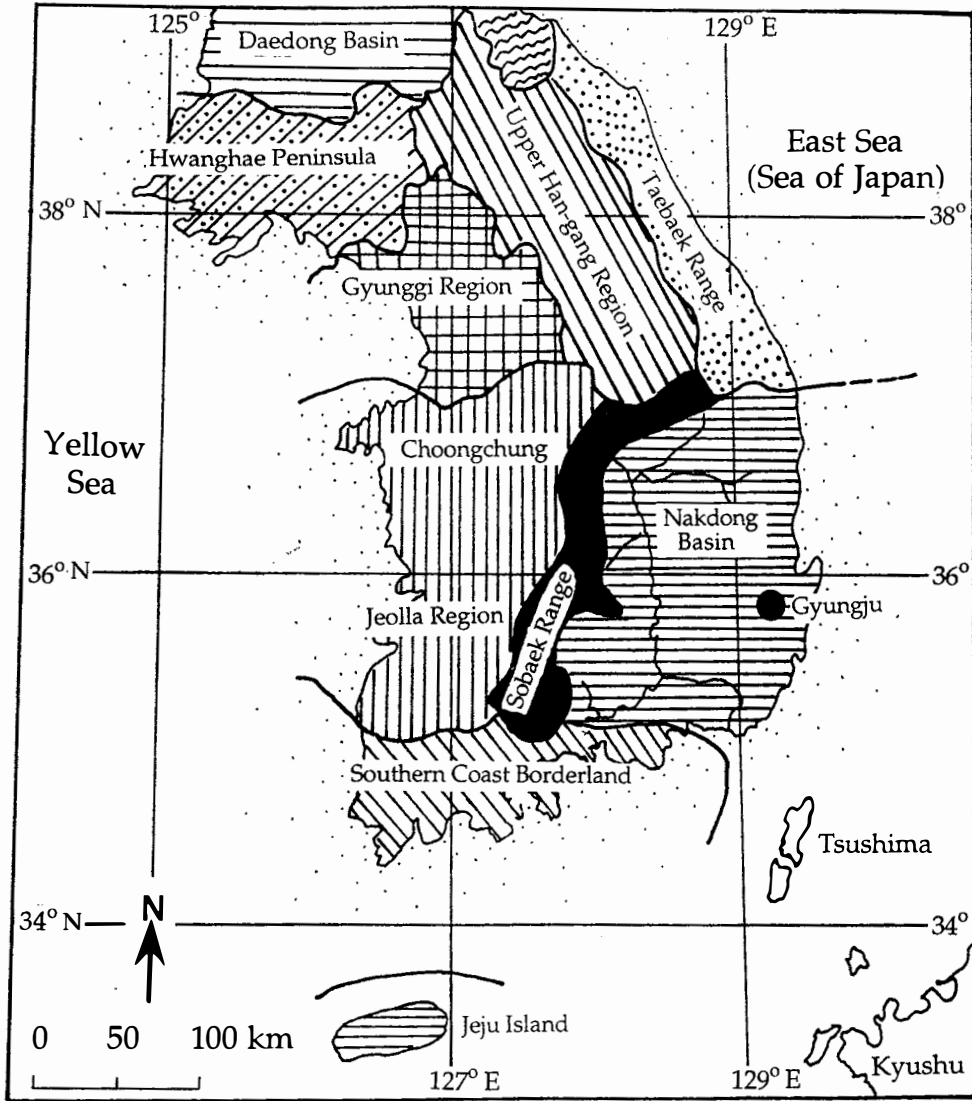


Figure 2. The location of Gyungju in the Nakdong basin (after Lautensach 1988:194).

basin, while igneous felsophyre and granite porphyry flows are identified in the eastern side of the basin (Jung 1984:8; Lautensach 1988:331). The geological characteristics of the Nakdong basin are closely related to the poor formation of its contemporary forests, caused primarily by a very shallow humic layer, and concomitantly, a shorter retention of water (Lee 1993:99).

The Nakdong basin is almost completely surrounded by mountains. The Taebaek Mountain Range, located north and northeast of the basin (the largest range in Korea), runs from north to south along the eastern coastline. The Sobaek Range, which branches off at the western portion of Taebaek mountain in the Taebaek Range, runs diagonally to the southwest. Thus, the Sobaek Range provides a natural boundary between both North and South Gyung-sang Provinces and the other provinces of South Korea, such as Gangwon Province (north), North Choong-chung (northwest), north Jeolla (northwest), and South Jeolla (west) (Figure 3).

The Nakdong River, the second longest river (525 km) and the third biggest river (23,860 km² drainage area) in Korea, originates from the western slope of the Taebaek Mountain Range and flows from north to south through the middle of the Nakdong basin until it eventually discharges into the Daehan Strait located in between the Korean peninsula and Tsushima Island of Japan. A large portion of the Nakdong basin (57.5 %) consists of low mountains, ranging between 200 and 500 meters in elevation. The Nakdong River has a great number of tributaries, and numerous basins are formed around those tributaries, including the Youngju, Andong, Hamchang, Euisung (north), Gumleng, Sunsan, Youngchun, Angang/Pohang, Daegu, Sungju, Gyung-san, Goryung, Guhchang (central), Ulsan, Milyang,

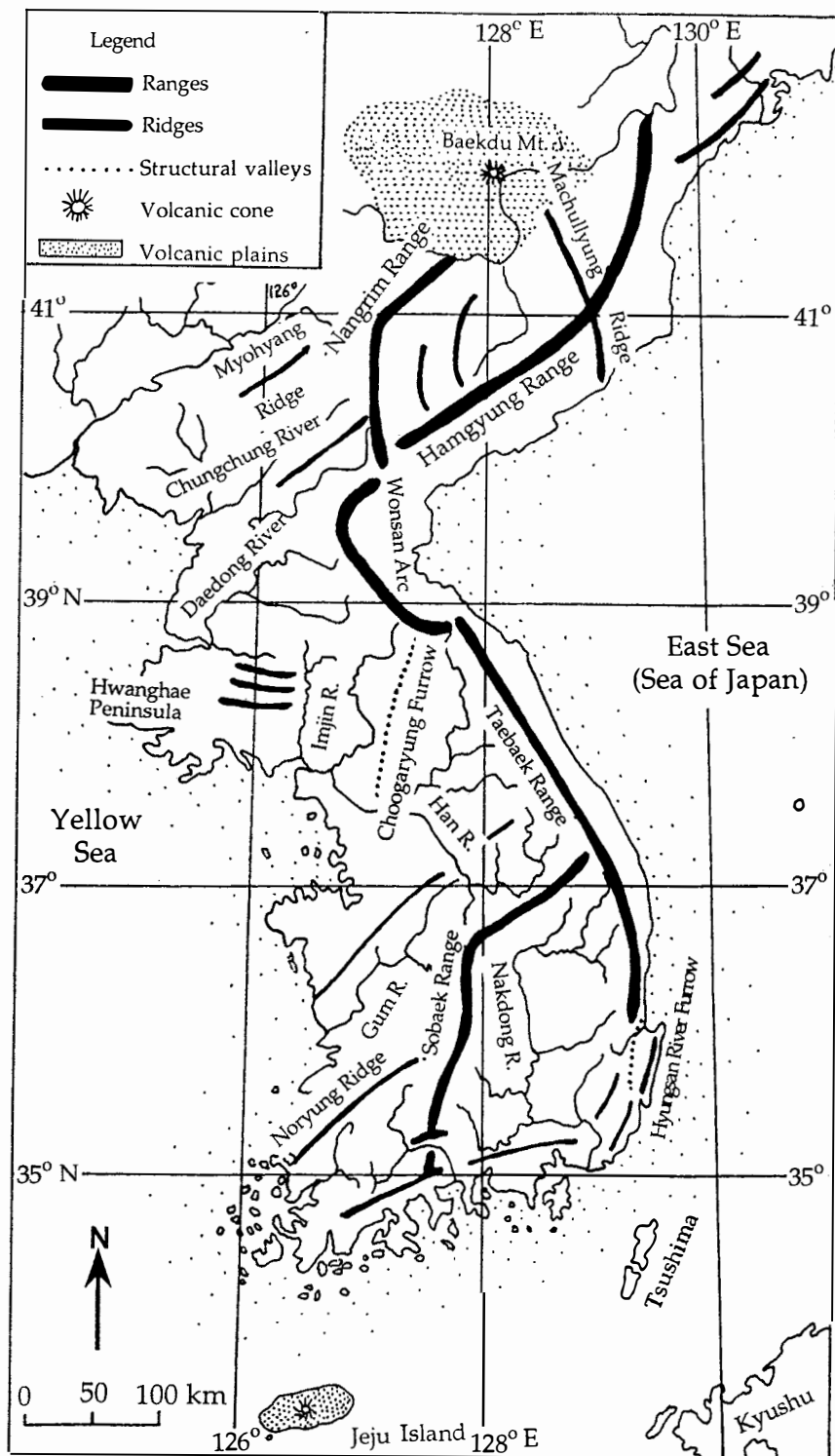


Figure 3. Generalized orographical map of Korea and the study area (after Lautensach 1988:3).

Changyoung, and Habchun, Hamyang, Haman, Changwon/Jinyoung, Yangsan, Jinju/Sachun, and Gimhae (south) basins, extending to just west of the current city of Busan (Figure 4). A great number of alluvial plains are formed around these basins. Among them, the Gumho plain (near Daegu), Jinyoung plain (near Jinyoung and Changwon), and Gimhae plain are very well known in contemporary Korea as areas of high agricultural productivity.

As a consequence of its rich natural resource base, the Nakdong basin has been densely populated since the Iron age (ca. third century B.C.). Many small independent polities (24 total, according to the *San quo chi*, an early Chinese historical document, and probably more; see Chapter III for more detail) developed on both the east and west sides of the Nakdong river and around its tributaries at least from the second century B.C. These small, autonomous polities largely remained independent until they were individually conquered by the Silla Kingdom. In fact, as will be seen below, the historical development of the Silla Kingdom was directly related to an expansion of its territory into those basins, thus obtaining highly productive arable land and dense population. Almost all archaeological sites incorporated in this dissertation are located in one of the above-mentioned basins.

The temperature of the Nakdong basin ranges between one degree below and above zero in winters, and 24° C and 26° C in summers (annual average temperature ranges between 12° C and 14° C). The winters (December to February) are generally cold and dry, whereas the summers (June to August) are hot and humid in the overall Nakdong basin. During the

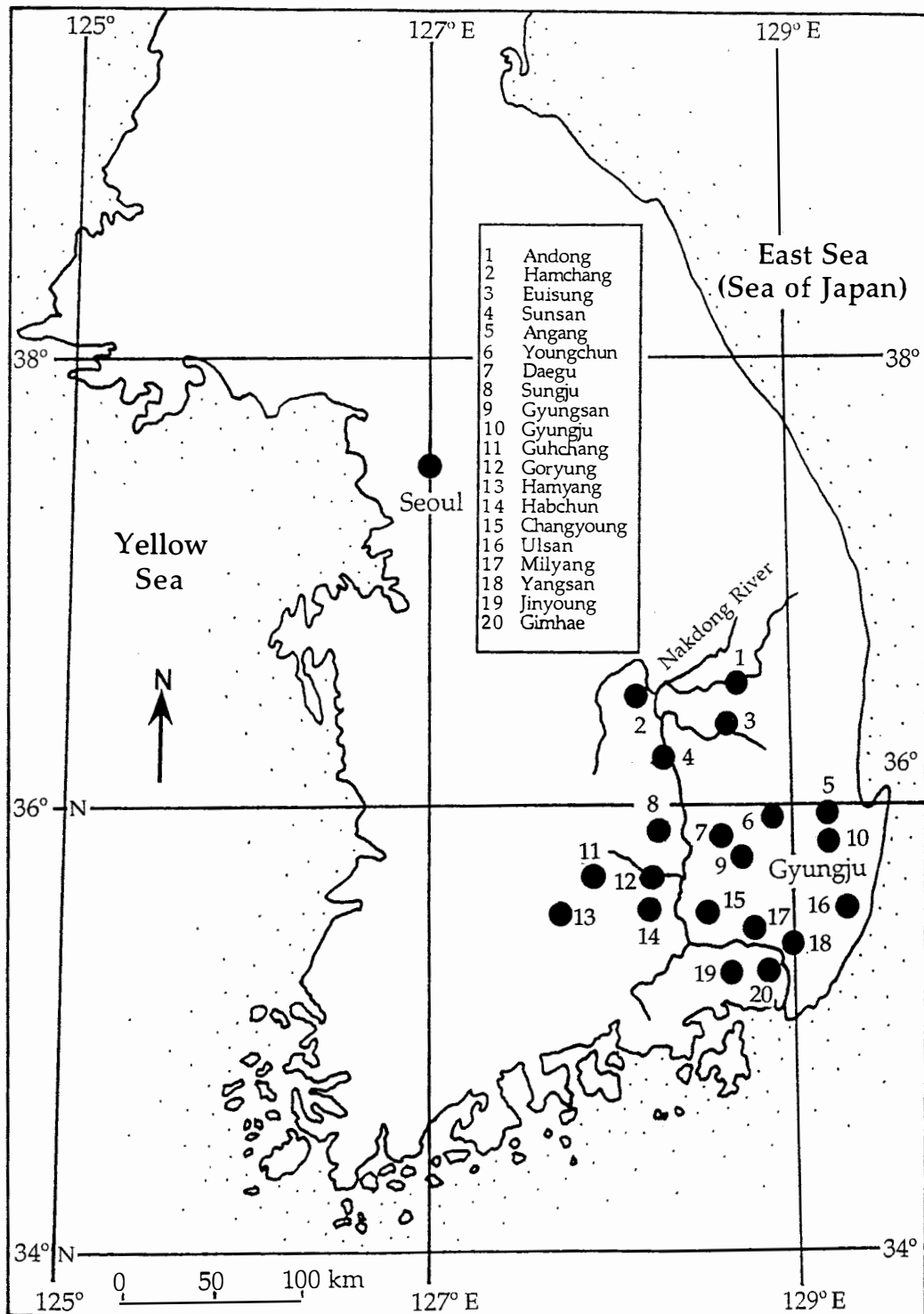


Figure 4. The distribution of individual basins located in the Nakdong basin.

summer time alone the Nakdong basin receives 40 to 60 percent of the total precipitation for a year (540 to 810 mm out of 1350 mm). This intensified and heavy rainfall for a very short time period during the summer, coupled with the shallow humic layer and lack of forest, is a critical agent in erosion and annual floods. The summer monsoon, accompanied by cyclones and typhoons, is responsible for this pattern. This causes annual flood problems near the Nakdong river. Therefore, it is rare to see wet rice paddy fields in the vicinity of the Nakdong river. Average precipitation varies from region to region, so that the southern and coastal areas tend to receive larger amounts of precipitation than areas to the north (1350 to 1450 mm in southern and coastal areas, 1000 to 1100 mm in northern and inland areas). In the fall (September to November), the Nakdong basin and Korean peninsula generally do not receive significant rainfall (approximately 20% of the total precipitation) and are usually free from storms. This provides an excellent climatic condition for agricultural practices (Jung 1984:43).

In relation to this climatic condition, the Nakdong basin has two different vegetational zones (Figure 5). Roughly below 35° 5' north latitude an evergreen broad-leaved forest of evergreen oak, schima, and laurel is formed (Jung 1984:63-64; Nelson 1993:20-21; Pearson 1974:Figure 1). Many of the evergreens growing in the southern vegetational zone are similar to those in the southwestern part of Japan. The major portion of the Nakdong basin between largely 35° 5' and 37° north latitude consists of a mixed mesophytic forest with such species as *Pinus densiflora*, *Quercus mongolica*, *Carpinus laxifolia*, *Acer mono*, *Maonolia verecunda*, and *Thea sinensis* (Jung 1984:63; Wang 1961, cited in Pearson 1974:93). The rest of the vegetational

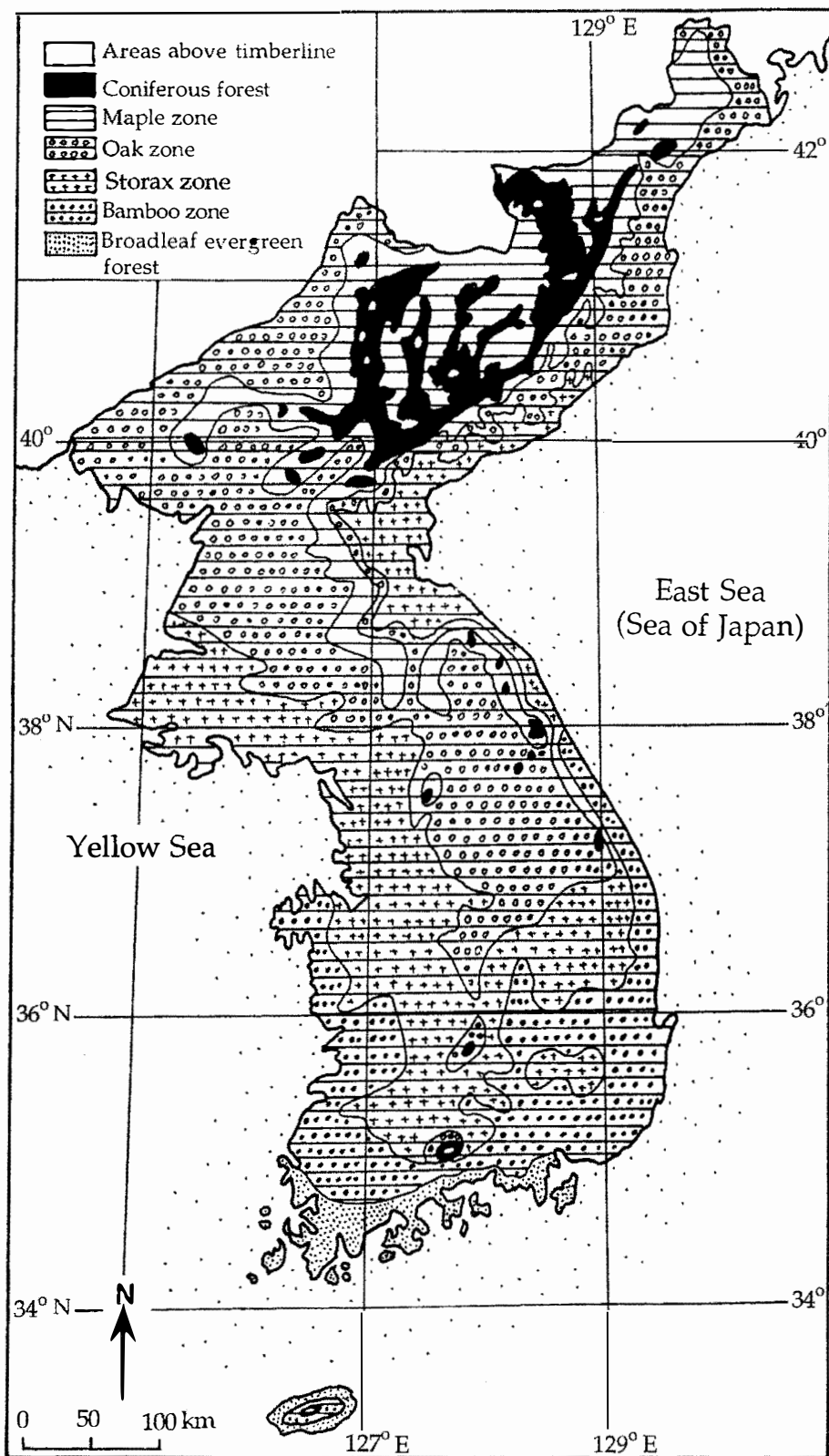


Figure 5. Vegetation zones of Korea (after Lautensach 1988:134).

zones, other than those in the Nakdong basin, from the south to the north consist of deciduous broad-leaved forest predominated by deciduous oaks, mixed northern hardwoods—mostly birch, and coniferous forests (Wang 1961, cited in Pearson 1974:93). There is a wide variety of flora in Korea. According to Pak (1946, cited in Yoo 1987:40), 201 families, 1102 genera, 3347 species, 50 sub-species, 1012 varieties, and 168 formae of higher plants were identified. This suggests that more than 4500 kinds of vascular plants grow in Korea (Yoo 1987:40; Kim, S. J. 1978 cited in Nelson 1993:20).

The common faunal distribution in Korea includes tiger, leopard, wolf, lynx, bear, wild boar, fox, weasel, rabbit, roe deer, raccoon, badger, squirrel, crane, wild dove, wood pecker, pheasant, lark, stork, swan, wild goose, quail, sparrow, and wild duck. The lower Nakdong river, in particular, has been a good habitat of migratory birds (Yoo 1987:46-48).

Four-hundred-twenty fish species have been identified in Korea, of which 150 are freshwater fish. Common fish found in the Hwang River, one of the tributaries of the Nakdong River in South Gyungsang Province, are eel, carp, Crusian [Prussian] carp, Goby minnow, pale chub, Chinese muddy loach, Sweet smelt, Korean bullhead, catfish, Korean auch perch, Mandrin fish, and snake head (Choi et al. 1990 and Han and Park 1985, cited in Choo 1991:34, Table 3). There also must have been some other aquatic resources like shellfish, freshwater snail, and many different kinds of shell, since these are common species to be found almost everywhere in Korea.

The nature of soil is generally determined by parent material [bedrock], climate, vegetation, and surface morphology of the earth (Jung 1984:64). Influenced by the acidic characteristics and old age of the bedrock, and sudden

heavy rainfall during the summers, Korean soil is quite acidic. Climatic episodes such as sudden heavy rainfall and long exposure of the surface to hot sunlight during the summers are considered to be responsible not only for acidic soil but for washing away the shallow humic layer and causing chemical weathering of the humic layer that contains a high content of the organic component (Jung 1984:64-65). The acidity of Korean soil is frequently blamed for the poor preservation of skeletal remains in pre/protohistoric burials.

Steep slopes coupled with loose vegetation capable of breaking the impart of water and light also contribute to the shallow humic layer. Consequently, it is not uncommon to see bedrock exposed at the surface in many parts of the Nakdong Basin and Korea generally. This may indicate that agricultural practices in Korea have been a little constrained by the difficult topography and acidic soil. Despite these factors, Korea has been successful in adopting agrarian practices from prehistoric society up until the present.

It is known that Korea has numerous and varied minerals, although the total amount of each mineral is not substantial (Jung 1984:115). There are some important iron ores and copper ore deposits in the Nakdong Basin, which have been exploited since the protohistoric time period. Apparently they must have played a critical role for the development of the Gaya polities throughout time, and the Silla Kingdom's territorial expansion may have been closely related to obtaining strategic resources. Iron areas are found in Nongso in Ulsan, Sangdong in Gimhae, Mulgum in Yangsan, and in Woedong in Gyungju, while copper ore areas include Haman, Gunbuk,

Gosung, Ilgwang Yangsan, Gukjun in Milyang, and Guryong in Changwon (Lee 1993:99-101) (Figure 6). The presence of abundant iron ore in the Nakdong basin has been regarded as one of the most important factors in the development of local polities there between the second century B.C. and the fourth century A.D. (Azumausio and Tanaka 1988:46-48; Gwon 1970:177-205; Mun 1973). The mere retention of abundant iron resources did not bring an automatic socio-economic development of polities in the Nakdong basin. According to Lee (1993:102-103), however, the appearance of powerful polities that could support technological innovation, systematic use of laborwork, a monopoly of iron production, and a trade network were critical factors for the development of an iron industry in protohistoric societies. Thus, the expansion and intensification of local resource exploitation, in association with control of foreign exchange interactions manipulated by emerging local sociopolitical elites, are critical in examining the factors involved in transforming non-complex societies (i.e., "band" and "tribal" societies) into sociopolitically complex societies (i.e., "chiefdoms" and "states") through a process of gradual concentration of economic and administrative powers.

From the ecological perspective, the Nakdong Basin must have been a very good habitat for prehistoric people. I will next examine ecological aspects of a more specific area of Gyungju, which is completely surrounded by the Nakdong Basin.

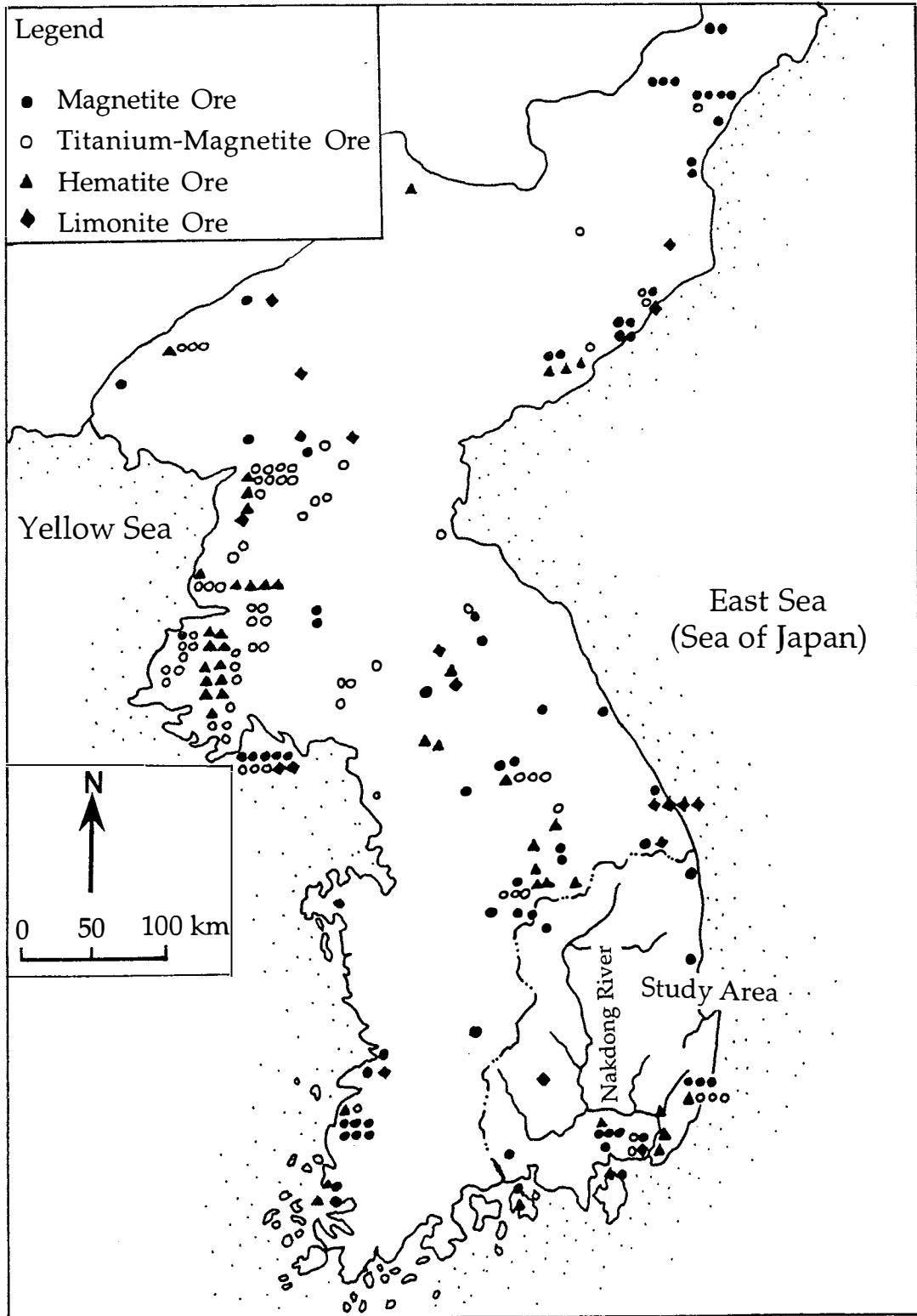


Figure 6. Distribution of iron ore in the Korean peninsula (after Azumausio and Tanaka 1988:46).

General Ecological Setting of Gyungju

According to the historical document the *Samguk sagi*, Saro/Suhrabul or Gumsung (the current city of Gyungju in North Gyungsang Province), which is located in the eastern part of the Nakdong Basin on the southeastern part of the Korean peninsula, was the capital of the Silla Kingdom from 57 B.C. to 936 A.D. (see Figure 1). Ultimately, as time progressed, the Nakdong Basin became a central part of the Silla Kingdom sociopolitically and economically. Interestingly, Gyungju, located in the center of a system of Hyungsan River valleys that parallel the direction of the mountains, provides convenient transportation connections with Pohang, Daegu, Busan and Ulsan (Jung 1984:11; Lautensach 1988:338).

Because of the isolated and remote geographical location, with natural barriers such as ocean on the east and rugged mountains and rivers on the north and west, the Saro polity there (pre-Silla Kingdom) had less frequent contact with socioculturally and politically advanced neighboring polities such as Naklang and Goguryo, to say nothing of China. Consequently, the development of the Saro in terms of politics, economics, society, and culture had been relatively slow compared to other polities (i.e., Goguryo and Baekje) on the peninsula. At the same time, the remoteness of the of the Saro polity may have played a positive role. It allowed them to escape the invasion of militarily superior polities. This rather stable sociopolitical condition may have helped them to establish the Silla Kingdom internally, at the early period, from a polity of Saro [Suhrabul] which then eventually achieved the unification of the Three Kingdoms in the Korean peninsula in 668 A.D. Indeed the Silla royal families noticed the inconvenience caused by their

geographic isolation after the achievement of the unification of the Three Kingdoms. Yet, in order to overcome some of the disadvantages of the isolated geographic location, the King Sinmun, in 689 A.D., attempted to move the capital from Gumsung to Dalgubul (the current city of Daegu), considered to be a much more convenient place in terms of general transportation and efficient administration.

This attempt was rejected by the Silla aristocracy, however, who may have been afraid of losing their political power base. As a consequence, Gumsung remained the capital of the Silla Kingdom until 935 A.D. when the Silla royal families finally succumbed to the newly emerged Korea Dynasty (918-1392 A.D.). The founder of the Korea dynasty, Wanggun, changed the name of the place from Gumsung to Gyungju, and made the city one of the two secondary capitals of the Korea dynasty after he reunified the Korean peninsula in 936. Gumsung [Gyungju] gradually declined after the collapse of the Silla Kingdom and became a secondary local administrative city. Gyungju had been the capital of the Silla Kingdom for nearly 1000 years, including the legendary historical time period. Consequently, many archaeological sites exist there, from the Bronze age to the historical time period, in the entire city and its adjacent areas.

The Gyungju Basin is surrounded by relatively low mountains (Figure 7) ranging from 200 to 300 meters above sea level (ASL). To the east is Myungwhal San (Myungwhal Mountain) (268 meters ASL) where a protohistoric defensive fortification is located (Myungwhal Fortress); to the southeast is Hyungjae Bong (Brothers Peak) (290 meters ASL); to the south is

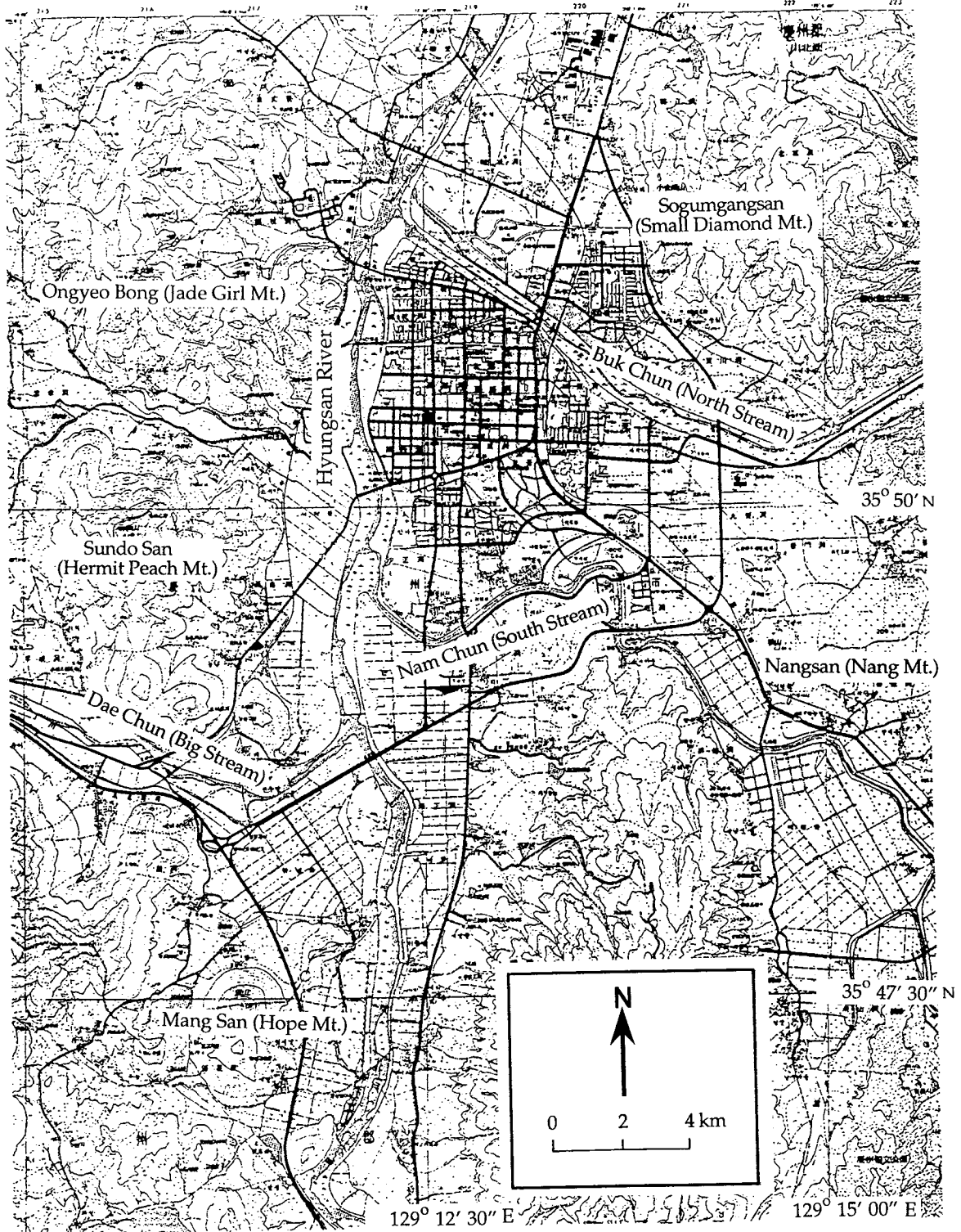


Figure 7. Map of the capital of the Silla Kingdom (Gyungju; after Korea National Geographic Survey 1992:No. 107-2, original scale 1:25,000).

Nam San (South Mountain) (368 meters ASL) where a protohistoric defensive fortification called South Mountain Fortress is located; to the southwest is Mang San (Hope Mountain) (232 meters ASL); to the west is Sundo San (Hermit Peach Mountain) (380 meters ASL), where another defensive fortification, Hermit Peach Fortress, is found; to the northwest is Ongyeo Bong (Jade Girl Peak) (214 meters ASL); and to the north is So Gungangsan (Small Diamond Mountain) (142 meters ASL). As one moves out of the small mountain ranges, one comes across relatively higher mountains such as, to the far east, Toham San (Toham Mountain) (745 meters ASL), to the far south Gumo San (Gumo Mountain) (494 meters ASL), to the far west, Byugdo San (Blue Peach Mountain) (436 meters ASL) and to the northeast, one mountain, of which the name is unknown, 650 meters high in elevation.

As mentioned above, the peripheral mountains to Gyungju city are neither very steep nor rugged. The characteristic of a relatively gentle slope enables residents to reclaim the land for dry farming practices. Therefore, all around the hilly part of the surrounding areas one finds many dry farming fields, which may have played a small role in the people's overall subsistence pattern.

The Hyungsan River (67.2 km in length, 1346 km² in total area) originates from Dosuh, Ulju, South Gyungsang Province, and flows from the south through the west side of the major portion of Gyungju city to the north. Eventually it flows to the Eastern Sea (Sea of Japan). Almost the entire Gyungju County belongs to the Hyungsan river and its tributaries. Dae Chun (Big Stream), which flows from the west, meets the Hyungsan River on

the southwestern corner of Gyungju city. Nam Chun (South Stream) originating from the southwestern part of Toham Mountain, meanders all the way from the east to the west until it diagonally runs into the Hyungsan River on the southwest corner of the city. Buk Chun (North Stream), originating from the northwestern portion of Toham Mountain, flows from east to west until it perpendicularly runs into the Hyungsan River on the northwestern corner of Gyungju city. Therefore, the core part of the city is surrounded by rivers except to the east. In addition to the three major rivers near the city, there are several small tributaries located outside of the city.

There are a few plains (e.g., Angang Plain and Gyungju Plain) and a great number of wet rice paddy fields located in the adjacent area of the Hyungsan River and its tributaries in the vicinity of Gyungju, which may have elevated the carrying capacity in the region. The high productivity in association with the fertility of the land around the Gyungju basin is even mentioned in the *Sui Shu*, one of the Chinese Twenty-five Standard Histories, compiled in 656 A.D. (Gyungju City History Compilation Committee 1971:6).

In particular, large amounts of wet-rice paddy plains developed in the southeastern part of the Nam Chun (South Stream), in the southern part of the city along and in the vicinity of the Hyungsan River, and along the western part of the Dae Chun (Big Stream). Due to a relatively rugged and steep local topography, not many wet-rice paddy plains developed in the vicinity of the Buk Chun (North Stream). The alluvial plains are used foremost for wet rice cultivation. The construction of many reservoirs and check-dams around the irrigated fields has considerably increased their rice

productivity. More than 160 small and large check dams and reservoirs exist within an area of roughly 220 km² (16 km x14 km, 1.4 per square kilometers), although many of them were not necessarily constructed in the course of the development of the Silla Kingdom. This issue of irrigation works is very critical for the explanation of the mechanisms responsible for the formation of the Silla Kingdom under study, and, therefore, more detailed discussion is presented in Chapter V.

It is difficult to expect that there is close agreement between pre- and proto-historic and modern landscapes in terms of the distribution of arable land and residential areas. For instance, many archaeological sites are located in the middle of wet-rice paddy fields today, which implies that those paddy fields were once part of residential/habitation areas during the time of the Silla Kingdom.

As far as the rivers and mountains are concerned, there is not much discrepancy between pre- and proto-historic landscapes and the modern landscapes in the Gyungju area. At any rate the three major rivers (i.e., Hyungsan River, South, and North Streams) located in the vicinity of the city were important for the cultural development of the people. First, the rivers were used as permanent water sources for irrigation, and people may have exploited aquatic resources (e.g., fish) from the rivers to supplement their diet from wet rice and grain agriculture. It is also possible that they may have used these rivers as transportation routes to collect taxes from subordinate polities or trade goods to affiliated or independent polities in the southern Korean peninsula.

Gyungju and other sites containing archaeological sites discussed in this dissertation are located in both North Gyung-sang and South Gyung-sang Provinces between 35° and 36° latitude. Although two of the archaeological sites discussed (Andong and Euisung) are located in North Gyung-sang Province, lie near 36° 5' latitude, the majority of archaeological sites are located in the Nakdong basin. Therefore, for all of them, almost all aspects of the natural environmental and ecological conditions (e.g., fauna, flora, geology, and mineral) are quite similar. The climate is temperate. The average temperature in the Gyungju basin ranges around 12° - 14° C (mean 13.2° C). Gyungju County annually receives 1098 mm of rainfall and has 270 frost-free days per year (Gyungju City History Compilation Committee 1971:7).

Summary

Under favorable environmental conditions for agriculture, many different plants were cultivated. The most important crops grown in the study area were barley, wheat, foxtail millet, buckwheat, soybeans, peas, cabbage, and many different kinds of fruit trees (especially apple) (Suh et al. 1989:16-17). The residents of the Gyungju Basin had almost all kinds of natural resources necessary for their subsistence. This rather stable subsistence base may have played a positive role in the development of the Silla Kingdom. As will be seen in Chapter VI, long-distance exchange for obtaining basic resources did not play a critical role in the Silla Kingdom.

Since the Silla area was geographically isolated, its people had relatively infrequent contact with sociopolitically and culturally developed countries, especially those located in the northern region (e.g., Naklang,

Daebang, Goguryo, and China), through which they would have been able to import various kinds of advanced culture in general. Therefore, geographic isolation is often blamed for a relatively slow sociopolitical and cultural development in the Silla Kingdom.

CHAPTER IV

GENERAL ASSESSMENT OF HISTORICAL DOCUMENTS CONCERNED WITH PROTOHISTORIC KOREA

Introduction

It is advantageous to utilize some of the early Chinese historical documents as well as Korean historical documents written in Chinese for the study of protohistoric Korean archaeology. Although historical documents do not answer all kinds of anthropological and archaeological questions concerning human evolution in general, it is certain that they provide a valuable source of hypotheses to test against archaeological data (Watson et al. 1984:47-48). Yet, we cannot and should not rely too heavily upon historical accounts, because of the complexity of motivations and viewpoints they incorporate. In other words, almost all historical documents are not free from a great number of negative factors, such as prejudice, distortion, and fabrication in association with certain families, particular religions, and ethnocentrism. There are other sources of errors, such as historians' misunderstanding, political motivation, mistake, revision, and misinterpretation. Therefore, when we use such textual data, a great amount of accompanying evaluation and interpretation of the source material must take place (Charlton 1981:152-155).

By the same token, archaeological data may encounter critical

problems as well, since they generally are influenced by many different cultural and natural post-depositional processes (Schiffer 1976:14-16, 1983:679-680). It is quite rare that archaeologists happen to hit upon an intact site such as Pompeii.

Sometimes archaeology is regarded as part of history, and vice versa (Hodder 1991:13). Whether archaeology belongs either to anthropology or history depends largely on where we are and with whom we are talking (e.g., Hodder 1991:14). In the case of Korea, like China and Japan, there has been a strong tendency that archaeology is a subdiscipline of history. The debate on whether archaeology should be linked more closely to history or anthropology seems to largely depend on individual researchers' phenomena of interest and their accompanying unique research design. More importantly, since our primary goal is to know what happened in past human societies, we are best advised to incorporate as many sources of data as possible. In this sense, the relationships between historical data and archaeological data ought to be complementary and supplementary in solving the problems of past human societies (Otterbein 1973:945). Thus, the usefulness of combining the two disciplines (i.e., history and archaeology) has been strongly emphasized by many archaeologists (Hodder 1987:vii; Trigger 1989:372-379).

In order to seek a better understanding of protohistoric Korean societies in terms of social organization, I will incorporate some Chinese and Korean historical documents into my discussion, while emphasizing that it is essential to be careful in combining of the two data sources. Therefore, before utilizing textual information, it is necessary to evaluate the historical

documents.

Chinese Historical Documents

Many Chinese documentary sources are available for this study. Some of them range from times prior to the Christian era to the fourth or fifth centuries A.D., and provide an invaluable source of information on political configurations, social structures, and economic patterns in southern Korea for approximately 500 years (two hundred years before the Christian era and three hundred years of the first millennium A.D.) .

Available Chinese official dynastic histories are the *Shi chih* (Historical Records), compiled by Ssu ma chien (145-86 B.C.) at the beginning of the first century B.C.; the *Han shu* (History of the Former Han) compiled by Pan ku at the end of the first century A.D.; the *Hou Han shu* (History of the Later Han) compiled by Fan yeh (398-445) in the middle of the fifth century A.D.; and the *San quo chih* or *Wei chih* (Record of the Wei Dynasty), compiled by Chen shou (233-297) at the end of the third century A.D. Other important Chinese documents are cited in the last two of the above mentioned texts. These unfortunately no longer physically exist. Particularly, the *Wei lueh*, believed to have been compiled by Yu huan about 10 years earlier than the *San quo chi* (Jeon 1982:47), was heavily quoted, if not copied, by authors of both the *San quo chi* and *Hou Han shu*. The first two historical texts (the *Shih chi* and *Han shu*) have been regarded as standard models for the compilation of later dynastic histories for more than 1500 years, at least in China and Korea.

Those historical documents fundamentally dealt with Chinese dynastic histories and sociopolitical matters; at the same time, they also made some

commitment to record a wide variety of cultures of many neighboring peoples, whom Chinese people conventionally treated as barbarians. The main reason Chinese people paid attention to neighboring peoples was that, by observing and knowing them, they wished to be able to efficiently control them sociopolitically and economically on a basis Sinocentrism. The majority of the early Chinese historical documents were compiled, not on the basis of historians' primary observations on indigenous peoples (Jeon 1982:148), but from the accounts of travelers, missionaries, dispatched military bodies, or merchants. This is one of the biggest disadvantages for the utilizing Chinese historical accounts for the study of protohistoric Korea; yet they are surprisingly reliable in many ways and rather more precise than conventionally thought. The most advantageous element is that those documents were almost contemporary. There was not much of a time gap between the real history and the documentation or compilation of the chronicles.

Official dynastic Chinese histories were usually compiled by the court of each dynasty for the preceding one (Chang 1986:7). Generally, most Chinese historians who engaged in compiling dynastic histories retained a highly fact-oriented attitude toward general historical processes and the flow of history. That is, they had a very strict philosophical attitude toward their mission of historiography (cf. Chang 1986:4-6). This indicates that many Chinese historical documents are unusually reliable and objective for the study of the past societies.

The *Shi chih* and *Han shu* carry some information about the history of Wiman Josun (ca. 194 B.C. -108 B.C.), located in the current city of Pyongyang

in northeast Korea. The *Han shu* also carries historical accounts concerning the same Wiman Josun, but it is known that the compiler of the *Han shu* almost exactly copied the original chronicles of Wiman Josun from the *Shi chih*. The *Han shu* describes a little more about ancient Korea in its geographical section. The *Shi chih* and *Han shu* are relatively less important for the study of polities in southern Korea than the *San quo chi* and *Hou Han shu*. Because the two former texts were compiled a bit earlier, their contents do not contain too much information concerning the cultures of polities located in southern Korea. This may also have been due to the fact that polities located in southern Korea were not large enough to be recognized by Former Han China and the Chinese historians. The early two texts largely confined themselves to the achievements of Wu Ti, the Emperor of Han, who conquered *Wiman Josun* of the ancient dynasty in 108 B.C. and established the Four Han Commanderies in north Korea and adjacent areas.

It is widely accepted that the *San quo chi* and *Hou Han shu* are the two most important textual sources for the study of early polities located in the Korean peninsula and adjacent regions (e.g., Japan and Manchuria). It is necessary to make clear the chronological order of document compilation and the relationships of their contents between the two sources. Historically, the Later Han (25-220 A.D.) existed before the Three Kingdoms in China (*Wei*, *Wu*, and *Shu*, not to be confused with the Three Kingdoms in Korea), between 220-280 A.D., but the *San quo chi* was compiled much earlier (ca. 280) than the *Hou Han shu* (ca. 445). There are some similar materials in both texts for the Eastern Barbarian section. Thus, it is widely believed that Fan yeh (398-445), the compiler of the *Hou Han shu*, copied and occasionally

slightly modified a considerable amount of the chronicles of Eastern Barbarian section from the *San quo chi* (Jeon 1982:47-48; Kim, J. B. 1986:242-243, 253-254; Young 1957:31).

Meanwhile, it is suspected that Chen shou, the author of the *San quo chi*, quoted, if not copied, a substantial amount of the Eastern Barbarian section from the *Wei lueh*, which is not extant today (Jeon 1982:47-48; Young 1957:31). Furthermore, Jeon (1982:47-48) speculated that another earlier historical text, 'Generic *Wei lueh*' (a provisional title), of which Chen shou may have taken advantage, may have existed, on the basis of the fact that there was not much time difference between the compilation of the *Wei lueh* and the *San quo chi*.

The major problem with the issue is that even though there are similarities between the *San quo chi* and the *Hou Han shu* in terms of the Eastern Barbarian chronicles, there are some differences, which cause a great deal of confusion and ambiguity between the two documents in terms of reliability (Jeon 1982:48). Based upon exhaustive research on the two texts, Jeon (1982) came to the conclusion that the author of the *Hou Han shu* may have seen the 'Generic *Wei lueh*' along with the *San quo chi*. Thus, because of the additional historical document available, Fan yeh, the compiler of the *Hou Han shu*, may have been able to put a little more additional information into the Eastern Barbarian section. This may have become the major source of the discrepancy between the *Hou Han shu* and the *San quo chi* in terms of the Eastern Barbarian section.

Yet, the *Hou Han shu* is not necessarily considered to be more reliable than the *San quo chi*, because the compiler of the historical document made

so many deletions, errors, and critical modifications in favor of Chinese dynasties (Jeon 1982:150). However, the disadvantages caused by the discrepancy between the two texts, if any, do not critically affect this study. So a detailed study of the problem need not to be discussed any further. The *San quo chi* is taken to be the most reliable Chinese historical document for the study of ancient Korean history, as well as archeology. Therefore, it will primarily be utilized, for the most part, in this dissertation.

Many scholars assume that the *San quo chi* deals with protohistoric Korean affairs for the third century A.D. in general (Ju 1990:240; Lee, D. H. 1990:133). This assumption may have been made on the basis of the fact that the document was compiled at the end of the third century A.D. In contrast, some other scholars argue that the affairs of polities located in southern Korea appearing in the *San quo chi* can be pushed back to as early as the third or second century B.C. (Choi 1990:44; Kim 1967:32; Lee, H. H. 1984:37; Lim 1993:65 and Table 73). Alternatively, it is not unreasonable to consider that the *San quo chi* describes historical events taking place before the third century A.D. (Kim, J. B. 1986:50, 100; Lee, M. K. 1990:257). I also believe there is a high possibility that the *San quo chi* not only describes contemporary matters, but also aspects of a much earlier time period of polities existing in southern Korea, like many other historical accounts conventionally do (see below for details).

Korean Historical Documents

There are two Korean historical documents available that are written in Chinese. They are the *Samguk sagi* (Historical Records of the Three

Kingdoms) and *Samguk yusa* (Memorabilia of the Three Kingdoms), which range from the middle of the first century B.C. to the middle of the tenth century A.D. Since they carry a good deal of valuable data concerning protohistoric Korea, they have been considered to be the most important extant historical sources for the study of ancient Korean history in general. Yet, as is the case for other historical sources, many scholars are not entirely persuaded by the two documents, and we are strongly encouraged not to utilize them without paying very careful attention to the texts. Since my dissertation heavily depends on the *Samguk sagi* in particular and to a lesser extent, the *Samguk yusa*, to examine the processes of the sociopolitical evolution of the Silla Kingdom, it is essential to evaluate the two texts in detail.

The *Samguk sagi* was compiled by Bu-sik Kim (1075-1151) with the aid of 10 government official historians in 1145, during the Korea dynasty. B. S. Kim, a politician and Confucian scholar, was 71 years old when he compiled the *Samguk sagi* with his 10 assistants, who were also politicians and scholars. When they were compiling the *Samguk sagi*, they cited a total of 123 references (69 Korean historical sources and 54 Chinese sources) (Choe 1980:6). Unfortunately, all the Korean references cited in the text do not exist today, while some of the Chinese literature still survives. Based upon the contents of the *Samguk sagi* and other Korean historical sources written by later Korean historians, it is generally presumed that Kim and his assistants cited and quoted a great portion from the *Gu Samguk sa* [History of Old Three Kingdoms], while they were compiling the *Samguk sagi*.

The *Samguk sagi* fundamentally follows the traditional Chinese

standard dynastic history compilation format. Bu-sik Kim, the chief compiler of the document, especially was influenced by the *Tzu chih tung chien* [Comprehensive Mirror for Aid in Government] of *Ssu ma kuang*. The *Samguk sagi* is composed of four parts: Bon-gi (annals), Yeon-pyo (chronological tables), Ji (treaties), and Yeol-jeon (a series of biographies), which are considered to be the Chinese standard annals biographical format. Yet, it is believed that Bu-sik Kim was rather liberal compared to the strict Chinese standard history compilation format. He emphasized a sense of independence, particularism, and a nationalistic concern for preserving accurate records of ancient Korean history, which eventually turned out to be the epicenter of the criticism by the historians of Yi Dynasty (1392-1910 A.D.) as well as contemporary scholars (Choe 1980:6; Shin 1981:16).

The *Samguk sagi* is the oldest extant Korean historical document and provides an invaluable source of the history of the Three Kingdoms and early Korean history in general. Nevertheless, it has been the object of major criticism from a great number of scholars from as early as from the fourteenth century A.D. up until the present. Criticisms from Neo-Confucian scholars of the Yi Dynasty included: (a) the text deviated from the Chinese standard history compilation format adopted in the *Shih chi* of *Ssu ma chien* and the *Han shu* of Pan ku; (b) there was too much use of dialect, vulgar words, and disrespectful expressions; (c) as a consequence, there was a lack of the guiding principle of Confucius in writing the annals; and (d) there was especially a lack of a wide variety of data (Shin 1981:13). In addition, mythical and supernatural events concerning the origins of the Three Kingdoms in the textbook were treated as inferior and nonsensical in nature by Neo-Confucian

scholars (Choe 1980:7).

During the Japanese colonial period, criticism by Korean scholars against the *Samguk sagi* became even harsher. For example, Che-ho Sin (1925), an ultranationalistic Korean historian, assessed the *Samguk sagi* as "the worst incident that took place in one thousand years of Korean history" (cited in Choe 1980:7). Sin treated Bu-sik Kim as a typical Confucianistic and Sinocentric flunky (Sin 1925, cited in Choe 1980:7).

Japanese and Western scholars have also showed great dissatisfaction with the *Samguk sagi* in terms of its reliability and mechanical imitation or reiteration of Chinese texts. In particular, the annals of the *Samguk sagi* prior to the middle of the fourth century (before the seventeenth King Naemul of the Silla Kingdom) are considered to be so full of fabrication and distortion that the documents have been doubted as to their reliability and usefulness as historical sources (Suematsu 1954:49-50). Iisima (1925:125-126, cited in Shin 1981:15), in particular, argued that 66 records of solar and lunar eclipses appearing in the *Samguk sagi* were mechanically copied out of the Chinese dynastic documents. Thus, he argues that the earlier part of the history of the Silla Kingdom described in the *Samguk sagi* cannot be accepted. Gardiner (1969:65) also made a similar argument concerning the records of eclipses and other astronomical phenomena documented in the *Samguk sagi*. Kim (1979:145-150), a Korean historian, also expressed a negative viewpoint against the *Samguk sagi* as well. This criticism against the *Samguk sagi* still continues.

On the contrary, some Korean historians and archaeologists have treated the *Samguk sagi* from rather a more positive perspective. Kim (1967)

wrote an article concerning the time period of the appearance of the Three Kingdoms period by positively evaluating some annals from the *Samguk sagi*. In this article, he argued that there is no absolute reason to flatly reject the chronology for the formation of the Three Kingdoms described in the *Samguk sagi*, and we cannot rule out the possibility that either the first century B.C. or the first century A.D. was a reasonable starting point for the chronology of the formation of the Three Kingdoms, according to overall sociocultural circumstances and archaeological records. In particular, he argued on the basis of archaeological evidence excavated in the Pungnabri Earth Fortification in Seoul (Kim 1967). He emphasized the presence of highly developed technology there in terms of pottery production. He went on to argue that although the *Samguk sagi* deserves criticism because of its erroneous parts, unreliable myths, and Sinocentrism, we should not treat the text as if it is a total fake, falsehood, and plagiarism, as it has been treated by some. This should be the case because the *Samguk sagi*, one of the standard dynastic histories of Korea, was compiled not by Bu-sik Kim alone but by Kim and 10 assistants – all excellent scholars of the twelfth century of the Korea Dynasty. Besides, Kim (1967) assumed that the *Samguk sagi* incorporated many then available historical facts concerning the Three Kingdoms and their relationships with neighboring independent small polities in the Korean peninsula. He, therefore, suggested that we need to re-evaluate the *Samguk sagi* as a historical source rather than taking a blindly negative attitude toward the text (Kim 1967:32-33).

Thus, since the late 1960s, much research has been conducted on reassessing of the *Samguk sagi* (Ko 1977; Lee 1978; Shin 1981, 1990) in

conjunction with ancient Korean history (Lee, J. W. 1980, 1982; Lee, M. K. 1990:254-257; No 1990; Shin 1984, 1985). I also agree with those scholars who positively assess the usefulness of the *Samguk sagi*. Even if there are some unreliable and unrealistic mythical and supernatural legends and anecdotes which make the text untrustworthy, we should not completely deny the entire *Samguk sagi* as a source of historical information. In spite of the fact that the document has some weak sides and drawbacks, like almost all historical documents do, there is no doubt that it provides a great deal of information, of which we can take advantage in one way or another to study ancient Korean history. What we really should avoid is taking two extremely different positions, either all negative or all positive. The more I read the *Samguk sagi*, the more I become convinced by the document. Many mythical accounts may carry information concerning what really happened in the past. I do not wish to argue that we accept the whole text without criticism. I suggest that we try to correctly evaluate the text and distinguish the real historical annals from the fabricated or mythical, distorted parts. As shall be shown, the *Samguk sagi* can be used as a source of hypotheses which will eventually be tested against archaeological evidence.

The *Samguk yusa* [Memorabilia of the Three Kingdoms], compiled by the Buddhist monk Yeon Il (1206-1289) around 1285 A.D. (approximately 140 years later than the *Samguk sagi*) is the second oldest historical document in Korea. Since the *Samguk yusa* is not utilized as much as the *Samguk sagi* in the dissertation, the general characteristics of the text will be discussed only briefly. The *Samguk yusa* also provides many invaluable sources for the study of ancient Korean history. A few characteristics of the *Samguk yusa* are:

(a) all the references cited in the text are mentioned, and most of them were "quoted" without any modification; (b) the format of the *Samguk yusa* is quite liberal; and it does not follow any specific standard history compilation format, which is regarded as one of the biggest advantages of the text; and (c) the author did not have to limit himself to stereotypical objects and affairs like most other standard dynastic histories (i.e., mainly political activities performed by rulers, such as the political achievements of kings, loyal families, noblemen, and warriors) (Lee 1978:35-50). The text also allows us to look at a wide variety of phenomena such as folk beliefs, superstitions, legends, and myths of commoners in ancient Korea. It is interesting to note that when the author was compiling the document he collected a great amount of raw data, and conducted much observation and survey on historical sites located in Korea (Lee 1978:40). In particular, since the *Samguk yusa* does not show any Sinocentrism, and is not in general concerned with the Confucianistic ethics, sometimes the text receives more attention from Korean scholars than the *Samguk sagi* does.

Since the *Samguk yusa* contains historical elements not included in the *Samguk sagi*, the historical value of the text is high. In this sense, the two historical texts should be combined to obtain a new view of ancient Korean history. In the dissertation some of the historical accounts appearing in the *Samguk yusa* will be used in comparison with accounts from the *Samguk sagi*.

Problems and Discordances Between Chinese and Korean Historical Documents

Advantages and disadvantages exist in using the Chinese and Korean historical documents. Some advantages of the Chinese historical documents are; (a) in most cases, they were compiled before much time had elapsed, if they were not completely contemporary, which gives them a lot of credibility; (b) they can be more objective, since they were written by foreign historians. Some disadvantages are: (a) Chinese historical documents were compiled not for the sake of neighboring peoples (i.e., "Barbarians," according to the Chinese perspective), but for the Chinese dynastic histories; (b) the majority, if not all, of the histories of neighboring peoples were compiled not by indigenous peoples but by Chinese historians, who may have been prejudiced by racism and/or Sinocentrism; (c) as a consequence, the histories of neighboring peoples are overall brief with little detail, and historical affairs taking place between Chinese dynasties and neighboring countries were described in favor of the Chinese dynasties; (d) historical observations concerning neighboring peoples were not primarily made by historians for themselves but by many different personnel, as was mentioned earlier. Therefore, although the Chinese historical documents are reliable in general, they are not necessarily accurate concerning specific historical events occurring in neighboring countries.

Likewise, the Korean domestic historical documents also have some advantages and disadvantages. One disadvantage is that there is a significant gap between the real historical circumstance and the time when the historians compiled their texts. For instance, domestic historical documents

exclusively depended on the Old Korean histories, which do not currently exist, so there is no way to cross-check the reliability of the historical documents. In this sense, Korean dynastic historians were not able to observe the dynamic process of human affairs taking place in the past. Advantages are that the Korean historical documents were compiled by indigenous Korean people, who were familiar with the historical context over a long period of time. They were able to incorporate many other old historical sources previously compiled by particular ancient Korean historians into their historical documents, as can be seen in both the *Samguk sagi* and *Samguk yusa*.

The confusion and ambiguity which mostly come from the disadvantages of Chinese and Korean historical sources have made it difficult for Korean archaeologists and historians to establish a convincing outline both in terms of sociopolitical and culture histories up until the fourth century A.D. Especially, most research conducted on the study of the histories and archaeology of the Sam Han and early Three Kingdoms periods (ca. B.C. 200 - 300 A.D.) is fragmentary and incomplete. Most of the research is limited to determination of locations of a few particular polities, with sketchy cultural information between the end of the first century B.C. and the end of the third century A.D. As a matter of fact, this period has been considered a big lacuna in Korean history and archaeology as well. Thus, a great number of research questions concerning sociopolitical evolution, culture change, and factors responsible for change remained unanswered.

The most critical discrepancy between the *San quo chi*, *Samguk sagi*, and *Samguk yusa* comes from the chronological coverage concerning the

emergence of particular polities in southern Korea from the first century B.C. to the end of the third century A.D. For instance, both the *Samguk sagi* and *Samguk yusa* provide the same chronology for the emergence of the Three Kingdoms: 57 B.C. for Silla, 37 B.C. for Goguryo, and 18 A.D. for Baekje, but this chronological frame is not generally accepted by modern historians and archaeologists. They believe that the order of the appearance of the Three Kingdoms consists of the Goguryo Kingdom first, followed by the Baekje Kingdom, and then the Silla Kingdom. They base this upon many Chinese historical sources, substantial archaeological evidences, and general historical circumstances.

Considering the concept and definition of the state framed by pioneering Korean historians, and the overall historical context on the Korean peninsula, different chronological schemes have been suggested. The chronological scheme suggested by an influential Korean historian and conventionally accepted for the formation of the Three Kingdoms is as follows: Goguryo, 53-146 A.D. (King Taejo), Baekje, 234-286 A.D. (King Go-i); and Silla, 356-402 A.D. (King Naemul) (Lee and Lee 1984:86-87, 135-137, 149-150; Yi 1959:236-237, 349-350, 398-399). In other words, during the period in question each dynasty transformed from a lower sociopolitical level (i.e., chieftdom, formerly called 'tribal-state' in Korea) to a higher level (i.e., kingdom or state). Thus the chronologies concerning the emergence of the Three Kingdoms appearing in both the *Samguk sagi* and *Samguk yusa* have only been treated as reference data by many Korean and Japanese historians and archaeologists.

In contrast, based upon the overall historical and archaeological

contexts in Korea, some scholars do not agree with this rather conservative chronological scheme and accept the chronology for the formation of the Three Kingdoms as it appeared in the *Samguk sagi* (Kim, J. B. 1986:58-61; Kim 1967). The validity of the new chronology has not yet been justified with sophisticated historical and archaeological data. Thus, this chronology concerning the formation of the Three Kingdoms cannot currently be accepted.

While there is no general consensus on the appearance of the Three Kingdoms, when the transition from chiefdom to kingdom took place largely relies upon the definition of state and kingdom. The historical criteria used to determine the level of complexity are (a) promulgation of codes, (b) determination of government officials' uniforms in conjunction with the color, and (c) hereditary succession to the kingship from father to son. Even with these well-defined criteria, there has been debate over the chronology for the appearance of the Three Kingdoms and especially the Silla Kingdom. The *Samguk sagi* and *Samguk sagi* have been blamed for the disagreement in the chronology of the formation of the Three Kingdoms in ancient Korea. Regardless of when the Three Kingdoms actually were transformed, however, the important issue for now is the assumption that the Three Kingdoms began to emerge at least between the first century B.C. and the first century A.D., as stated in the *Samguk sagi* and *Samguk yusa*.

On the contrary, the Chinese *San quo chi* does not mention anything about the existence of Baekje and Silla as kingdoms or state level societies in south Korea during the time period between the first century B.C. and the end of the third century A.D. Instead, the *San quo chi* describes the presence of

three collective polities (Ma Han, Jin Han, and Byun Han, usually called Sam [Three] Han) in southern Korea during the same period. This is the main reason why the emergence of the Baekje and Silla Kingdoms recorded in the *Samguk sagi* has not been widely accepted by the majority, if not all, concerned scholars. Interestingly, the Goguryo Kingdom was in fact recognized in the *San quo chi*. In the mean time, according to the *Samguk sagi*, the Goguryo Kingdom appeared last among the Three Kingdoms, which is not accepted as historical fact. This discrepancy concerning the appearance of the Goguryo Kingdom between the *San quo chi* and *Samguk sagi* is one of the important reasons why many scholars regard the *Samguk sagi* as an unreliable historical text.

While Goguryo independently appears in the Eastern Barbarian section of the *San quo chi*, neither Silla nor Baekje are mentioned there. Instead, the two kingdoms appear under slightly different names in the Sam Han section of the *San quo chi*. Silla is written with different Chinese characters, but a similar pronunciation is indicated. Baekje is also written with different Chinese characters, but the pronunciation is identical.

Detailed information concerning Ma Han, Jin Han, and Byun Han, collectively called Sam Han [Three Han], appears in the *San quo chi*. The Sam Han consists of 78 *guks* (literally, 'states,' in Chinese, but they are considered to be independent small polities, see Chapter V). The *San quo chi* gives general figures for the Sam Han as follows: Mahan, the largest Han of all, consisted of 54 polities located in the western and southwestern portion of the Korean peninsula; Jin Han consisted of 12 *guks*, located in the southeastern portion of the Korean peninsula, largely on the east side of the

Nakdong river; Byun Han also consisted of 12 polities, predominantly located in the middle of southern Korea, largely on the west side of the Nakdong river in between Ma Han and Jin Han. It is believed that a few polities of Byun Han may have been located on the east side of the upper Nakdong River in North Gyungsang Province

Baekje, written with different Chinese characters and the same pronunciation in both Chinese and Korean, appears in the *San quo chi* as one of 54 polities in the Ma Han. That is, the Chinese text counts Baekje as an individual polity of Ma Han, but does not provide any detailed information concerning Baekje. The same is true for Silla. That is, Silla, written with different Chinese characters and with a different but similar pronunciation in Chinese and Korean (i.e., Saro instead of Silla), is treated in the *San quo chi* as just one of the 12 polities of the Jin Han. But again, no specific information concerning Silla is available in the text.

Thus, Chen shou, the compiler of the *San quo chi*, had at least noticed the existence of the two polities of Baekje and Saro in the Ma Han and Jin Han areas respectively, although he did not describe any further sociopolitical circumstances concerning the two polities. Basically, all the polities were lumped together into three entities of Han (i.e., Ma Han, Jin Han, and Byun Han). Chen shou went on to describe each Han's general sociopolitical configurations, aspects of cultural behavior, and brief historical backgrounds. But because the histories of Baekje and Silla were not directly provided in the *San quo chi*, which was compiled at the end of the third century A.D., many Korean and Japanese historians believe that the Baekje and Silla Kingdoms did not emerge until the end of the third century and fourth century

respectively. More importantly, these scholars concluded that the Annals of each kingdom in the *Samguk sagi*, which describes the early histories of the Baekje and Silla Kingdoms, were "unreliable" for the study of ancient Korean history of the period, at least for the first three hundred years of the first millennium A.D.

Because of these discrepancies between the *San quo chi* and *Samguk sagi*, opinions differ among Korean and Japanese scholars regarding the formation of the Three Kingdoms. The key controversial claim is that the Silla Kingdom did not emerge until the middle of the fourth century A.D. (Azumausio and Tanaka 1988; Buta 1980; Inoue 1978; Kim, C. J. 1982; Kim, J. H. 1982a:9, 1982b; Lee 1986; Lee and Lee 1984; Matshou 1932, cited in Lee, J. W. 1985:211-215; Yi 1959). This conclusion is primarily based upon the following interpretations: The *San quo chi*, compiled during the third century, does not describe anything specific about the Saro and Baekje as predecessors of the Silla Kingdom. This indicates that Baekje and Silla were still small polities when they were documented in the *San quo chi* at the end of the third century A.D., and even in the middle of the fourth century A.D. (i.e., reference to the seventeenth King Naemul, 356-402 A.D.) in the case of Silla. This viewpoint has been widely accepted by many scholars and has become a standard historical interpretation for Korean National History.

Recently, however, this interpretation has been challenged by several Korean archaeologists and historians (Chun 1976a, 1976b; Kim 1967; Kim, J. B. 1986:46-68; Lee, J. W. 1982; Lee, H. H. 1984; Shin 1984:27, 1985). According to the latter group, although the *San quo chi* was compiled during the third century A.D., the contents of the text in terms of its coverage can be pushed

back to as early as the third or second century B.C. Thus, the duration of the Three Han period should be shifted from the first century to third centuries A.D. to an interval between the third or second century B.C. and the first century A.D. (Choi 1990:44; Kim 1967:32; Lee, J. W. 1982:50-51, 62; Lee, H. H. 1984). The underlying assumption on which this assertion is based is that Chen shou, the compiler of the *San quo chi*, may not have been familiar with the specific sociopolitical situations of ancient Korean polities (i.e., those of the Saro and Baekje) since he was a foreign scholar who presumably had not been to Korea. Consequently, he may have overlooked the presence of Saro and Baekje as distinguished polities. Therefore, the historical accounts concerning not only the formation of the Silla kingdom but also its general history as it appeared in the *Samguk sagi* can be accepted as historical facts (Kim 1967; Lee, J. W. 1982; Lim 1993:65) or with some modifications (Chun 1976a, 1976b; Shin 1985:31).

Interestingly enough, according to Chinese historical texts (e.g., the *Shih chi* and *San quo chi*), *Jin guk*, considered to be the predecessor of Jin Han [though not necessarily of Saro], already existed in the southeastern portion of the Korean peninsula sometime before the first century B.C. or even the second century B.C. The *Jin guk* may have consisted of many polities, as described in the *San quo chi*, including Saro [pre-Silla]. Thus Saro may have already existed as a chiefdom during the first century B.C.; it may have continued to evolve from the first century A.D. onward by conquering neighboring polities, eventually reaching a state level of development at the beginning of the second century A.D. (Lee, M. K. 1990:254, 284).

I also think that many polities making up the Jin Han existed at least

from the second century B.C. onward. In terms of sociopolitical complexity, they remained chiefdoms. This is apparently documented in both historical texts and archaeological records. According to mortuary analysis, the Saro [pre-Silla] evidence shows that the transition from chiefdom to state in the study area began around the beginning of the third century and was completed in the fourth and fifth centuries A.D. I believe that the Silla Kingdom emerged as a state-level society sometime between the middle of the fourth and the beginning of the fifth centuries. A combination of historical and archaeological data supports this assertion well (see chapter VII for details).

Conclusion

Both Chinese and Korean historical documents have advantages and disadvantages. Notably some of the Chinese historians, including Chen shou, author of the *San quo chi*, copied from earlier historical documents. This casts some doubt on the credibility of those documents. The *Samguk sagi*, compiled by Korean author Bu-sik Kim, also has some problems as well. Probably more importantly, though, there are critical discrepancies between the Chinese and Korean historical documents concerning overall aspects of sociopolitical environment and the chronology of the formation of the Baekje and Silla Kingdoms in southern Korea.

Nevertheless, these documents indispensable for the study of past Korean cultures. They provide invaluable sources of information for the study of sociopolitical evolution of polities in ancient Korea. The discordance between the two sources should be alleviated somewhat by archaeological

evidence. If the archaeological data and historical records are analyzed in conjunction with each other, much more promising research outcomes can be expected.

CHAPTER V

EVIDENCE FOR SOCIAL STRATIFICATION IN SARO: A PRE-SILLA POLITY IN SOUTHERN KOREA

Introduction

This dissertation is primarily concerned with the mechanisms responsible for the emergence of a state-level society. Particularly, it is hypothesized that warfare may have played a key role in the formation of the Silla Kingdom. However, prior to examining the relationship between the role of warfare and state formation, it is necessary to investigate the level of sociopolitical complexity of the Saro [pre-Silla Kingdom] polity and other polities distributed in the study area from the second century B.C. to the second century A.D. If a state level society had already appeared here sometime between the first century B.C. and the first century A.D., as was postulated by Lee, J. W. (1982), this research would become irrelevant.

In this chapter, reconstruction of social stratification in protohistoric polities, as inferred from documentary and archaeological evidence, will be discussed. Then, in the following Chapters VI, VII, and VIII, factors responsible for sociopolitical development will be examined.

I primarily utilize the *San quo chi* and *Shih chi* to reconstruct the level of sociopolitical complexity in the first half of the period of interest (0 - 200 A.D.) in the study area and south Korea in general. As was briefly mentioned

in Chapter IV, the *San quo chi*, a Chinese historical document, provides critical information concerning the sociopolitical circumstances and cultures of the pre-Silla and other neighboring polities. By analyzing and interpreting the historical document from different angles, it is possible to reconstruct the level of complexity of the pre-Silla Kingdom and other relevant neighboring polities in southern Korea.

In terms of archaeological evidence, I concentrate on mortuary analysis. I begin by investigating the dolmen, a burial type common during the Korean Bronze Age. Although a detailed study of the dolmens is beyond the scope of this research, there are important reasons to briefly examine dolmen culture here. First of all, it represents almost the only archaeological data available for studying the early culture history of the study area. Ironically, much more is known about the archaeology of the dolmens than about the stage of immediate interest here, which lies between the time of the dolmen period and the Silla Kingdom. That is, mortuary evidence and general archaeological information concerning the development of social stratification during the first half of the time period of interest (0 - 200 A.D.) are considerably poorer than for the dolmen period. Secondly, many Korean archaeologists and historians have postulated that dolmen society reached the chiefdom level, and some scholars have even attempted to link the dolmen society to the developing Silla Kingdom (Lee, J. W. 1982). This is still open to debate, however, these scholars classified the dolmen society as being at the chiefdom level without conducting an appropriate archaeological analysis. Therefore, it is necessary to examine the question of the sociopolitical level of the dolmen culture in the study area specifically, and Korea in general.

At the same time, the stone-cist, another burial type of the Korean Bronze Age, and generally considered to be contemporary with the dolmen, will be examined to more clearly illuminate the level of complexity of the dolmen period. Finally, for a relatively later time period (100 B.C. - 100 A.D.), I discuss some general characteristics of pit-burials with wooden chambers that have been discovered in and near the study area.

Reconstruction of Social Stratification in Saro According to Historical Accounts

It is widely accepted that the Saro polity, one of 12 Jin Han polities located in the Nakdong basin, eventually transformed into the Silla Kingdom sometime between the middle of the fourth and fifth centuries A.D. The processes and mechanisms for Saro's transformation from a lower level of independent small polities (i.e., chiefdoms) to a state form of organization in the Jin Han area is the major research question for this dissertation. As a preliminary step, it is necessary to reconstruct the sociopolitical level of the Saro polity in the study area particularly and those of polities of the Sam [Three] Han region in general.

Chinese historical documents (*Shih chi* and *San quo chi*) dated to the second century B.C. through the third century A.D. are used in an attempt to reconstruct the level of sociopolitical complexity existing prior to the emergence of the Silla Kingdom. This will provide a rough sketch of transforming political configurations of independent polities located in the study area and in the entire Sam Han region as well. The *Samguk sagi* and *Samguk yusa*, Korean literary sources, are also available, but as described in

Chapter IV, they are not reliable sources on the formation of the Silla Kingdom.

First I offer a brief overview of the general circumstances of the Sam Han in terms of social stratification as described in the Chinese document, *San quo chi*. Then I specifically discuss the Saro polity. The Eastern Barbarian Section in the *San quo chi* mentions a wide range of cultural aspects of ancient polities of the Sam Han time period of Korea such as geography, political systems, economic transactions, settlement patterns, architectural structures (palaces, architecture, and dwellings), military technologies, agriculture, demography, land transport, living standards and routines, territorial organization, law, religious beliefs and practices, ritual ceremonies, marriages, mortuary practices, ethnic origins, and languages.

A total of 78 small political entities in the Sam Han region are mentioned in the *San quo chi*, and superficially it seems as if they all were state level societies. That is, the Chinese character, *guk*, attached to the end of the name of each polity (e.g., Saro *guk*, Mokji *guk*, Baekje *guk*, Yugijuh *guk*, Byunjin Anya *guk*, and so on) implies a state level of social organization. Since the Chinese character, *guk*, literally means 'country' or 'state,' its usage in this context has caused a lot of problems in the study of ancient Korean sociopolitical evolution. For one thing, many Korean scholars have not had a clear conception of 'chiefdom' and 'state' as the concepts are used by current anthropological archaeologists. Because these ancient "*guk*" were clearly not full-fledged states, Korean historians and archaeologists used such contradictory terms as 'tribal-state' to designate them until the mid-1970s. After such terms were heavily criticized, they all disappeared. To avoid using

the term 'tribal-state,' some Korean historians then began to use slightly modified versions of 'state' such as 'small state' or 'primitive state' (Lee, H. H. 1984:207-209; Lee, J. W. 1982) or even 'walled-town state' (Chun 1976a, 1976b; Lee, K. B. 1986:9-35) to characterize the sociopolitical type of the Sam Han polities which Chinese which Chinese historians had recorded as "guks." Meanwhile, to designate earlier and less complex cultures in Korea, another obviously contradictory term, '*Gunjang Gukga*,' which literally means 'chiefdom-state,' was coined by a few Korean historians (Lee, J. W. 1982; Lee, K. B. 1985). This has unfortunately become officially registered in the Korean National History textbook (Lee, K. D. 1990:343). Judging from these circumstances, many Korean scholars still do not seem to clearly understand the socioevolutionary terms 'chiefdom' and 'state' as generated by Service (1962) and commonly used by many anthropological archaeologists.

Returning to the use of '*guk*' in the *San quo chi*, it is impossible to consider that all of those entities labeled as '*guk*' were either 'kingdoms' or 'states' (Gardiner 1969:43), or in some cases, even chiefdoms. In the first place, it is impossible to accept that so many kingdoms, states, or chiefdoms existed in such a small region. Gardiner (1969:43) describes the sociopolitical level of Mahan as follows; "the Kuo [*guk*] of Ma-Han were probably clan settlements, probably no more than large villages, certainly something very much less sophisticated than the kingdom with its various provinces and officials..." Although Gardiner is not speaking directly of the 12 *guks* located in the Jin Han area, and there must have been some fluctuations in terms of territory and population size among *guks* across the entire Sam Han region, the situation he describes is applicable to Jin Han and Byun Han as well,

because all of the *guks* (a total of 78) located in the Sam Han region of south Korea were contemporary and equally treated by the compiler of the *San quo chi*. Therefore, although Gardiner (1969:43) does not explicitly point this out, his analysis indicates that the sociopolitical complexity of the Sam Han polities reached, at most, the chiefdom level. In other words, even though the *San quo chi* uses the Chinese character 'guk' to present each polity, it is clear that those polities by no means reached the 'state' level of political structure (Barnes 1990:133).

There is a historical account in the *San quo chi* that provides important information on the level of sociopolitical complexity among the Sam Han. According to the Byun Jin [Byun Han] section in the *San quo chi*:

Byun Jin [Byun Han] is also comprised of 12 *guks*. And there were several small villages and each village has a Guhsa [leader of a village]. [Among them] Person who had a strong political power was called [from higher to lower hierarchy] *Sinji*, *Humcheuk*, *Bunye*, *Salhae*, and *Eubcha*. Byun Han and Jin Han had a total of 24 *guks*. A large *guk* had 4000-5000 households and small one had 600-700 households, which makes a total of 40,000-50,000 households. Among them 12 *guk* were subordinated to Jin Wang [king]. Jin Wang [king] was always chosen from Ma Han people to be hereditary king from generation to generation, Jin Wang [king] was not supposed to independently become king [Chen shou 1987:287-288; translation by the author].

Although this chronicle comes from the Byun Han section of the *San quo chi*, judging from the contents, it describes a general sociopolitical circumstance including the entire Sam Han, with a specific emphasis on Jin Han. Thus, it is possible to use this chronicle as a primary historical source to examine the sociopolitical stratification of Jin Han as well as the other two Hans (i.e., Ma Han and Byun Han). As can be seen above, a highly developed

system of sociopolitical stratification is manifested by the *San quo chi* to have existed in southern Korea from the first century to the third century A.D.

According to the above historical annals, sociopolitical stratification consisted of at least three distinct classes: a 'ruling' class, comprised of hereditary kings and their kin-related retinue; an 'intermediate' class, comprised of political leaders of many hierarchically ordered villages like *Guhsa*, *Sinji*, *Humcheuk*, *Bunye*, *Salhae*, and *Eubcha*; a 'ruled' class, comprised of 'commoners' responsible for paying taxes, tributes, and providing labor for civil works or warfare, and mainly engaged in agricultural production and manufacturing activities (e.g., ceramics, tools, and ornaments). As will be shown below, a 'slave' class also appears in the *San quo chi*. Thus, the chronicle suggests a multi-level hierarchic sociopolitical system in the region that could be taken to indicate the presence of state-level societies during the Sam Han period.

The historical account alone, however, is not sufficient to confirm that these polities had reached a state level society by the third century A.D. I believe that the Chinese chronicles were using terms familiar to themselves in the context of their own civilization to describe societies that were actually much simpler. For example, even though Ma Han was much bigger than Jin Han and Byun Han in terms of territory, population size, and controlling political power, archaeological data do not indicate that any of *guks* located in the Ma Han area had reached the level of complexity indicative of a state-level society. As shall be shown later (Chapters VI and VII), there is simply not enough archaeological evidence to classify either the Byun Han or the Jin Han polities as state level societies. I believe that the Sam Han remained by

and large at the chiefdom level until the end of the third century, as will be developed further below.

It is critical to understand that the polities of Sam Han and the earlier forms of the Baekje and Silla polities were parallel, contemporary political entities. Thus, although the Baekje Kingdom ultimately grew out of the Ma Han, and the Silla Kingdom grew out of the Jin Han, it should be understood that before the transition from lower to higher levels of sociopolitical organization took place, the two polities (i.e., Baekje and Silla) were members of the Ma Han 54 polities and Jin Han 12 polities respectively (Figure 8). Ma Han, Jin Han, and Byun Han together made up the Sam [Three] Han, a collective name for approximately 78 small independent polities that existed in south Korea. Thus, the interrelationship between the Three Han, and the Baekje, and Silla should not be understood from the view point of unilinear sequential succession. Most importantly, the Sam Han should not be regarded as a unified political entity. There must have been a tremendous amount of interaction among small independent polities in the entire Sam Han [Three Han] region. Yet, a centralized government by no means existed until the second century A.D. in the Ma Han region, and until the middle of the fourth century A.D. in both the Byun Han and Jin Han regions.

Mahan, the largest Han of all located in western Korea, is believed to have transformed into a kingdom-level society (Baekje Kingdom) earlier than did Jin Han (Silla Kingdom). Byun Han, a group of polities collectively called Gaya in later times, also achieved a distinguished development both in socioeconomics and politics. Although it is conventionally believed that none of the polities located in the Byun Han area ever reached a state level of

Date	China	Korea					Japan
700 B.C.	Eastern Chou (771)	Bronze Age: Dolmen					Jomon
600 B.C.		Gija Josun (? - 194)					
500 B.C.	Spring/Autumn P. (595-403)						
400 B.C.	Warring P. (403-221)						
300 B.C.	Qin (256-210)						Yayoi
200 B.C.	Former Han (202 B.C.- 8 A.D.)	Wiman Josun (194 - 108) Jin					
100 B.C.		Naklang/Daebang Commanderies					
0	Sin Dynasty (8-23) Later Han (25-220)	(108 B.C. - 313 A.D.)	Goguryeo (37 B.C. - 668 A.D.)	Ma Han 78 <i>guks</i> [polities]	Byun Han 12 <i>guks</i> [polities]	<u>Jin Han</u> 12 <i>guks</i> [polities]	Wa (100 <i>guks</i>) [polities]
100 A.D.				Wolji <i>guk</i> Gunma <i>guk</i> Mokji <i>guk</i>	Yeosim <i>guk</i> Byunjin Anya Guya <i>guk</i>	Bulsa <i>guk</i> Bulsa <i>guk</i> Horo <i>guk</i>	Yamaitai
200 A.D.	Three Kingdoms (220-265) Western Jin (265-316)			Baekje <i>guk</i> Baekje (234)	Gaya (234 - 660)	Bulsa <i>guk</i> Saro <i>guk</i>	
300 A.D.	Eastern Jin (317-420)				Ara Gaya So " Sungsan "		Kofun
400 A.D.	North and South Dynasties (420 - 589)				Goryung " Gumgwan " Dae "		
500 A.D.	Sui Dynasty (589-618)				Gumgwan G. (532) Dae Gaya (562)	Silla (503)	
600 A.D.	Dang Dynasty (618-907)		668	660		Unified Silla (668)	
700 A.D.		Unified Silla					

Figure 8. Chronological table of early Korean history in comparison with Chinese and Japanese historical sequences.

society (Kim, T. S. 1990), I believe that at least two polities (i.e., Gungwan Gaya and Dae Gaya) must have reached the state level before they were all individually conquered by Silla by the middle of the sixth century A.D. Japanese scholars have long insisted that this Byun Han, or Gaya area was occupied from the third century to the sixth century A.D. by a colonial post of Wa (ancient Japan), conventionally called 'Mimana Nihonbu.' Although this issue is beyond the scope of my project, a brief discussion of a few essential points will be offered in Chapter VIII. As will be discussed in Chapters VII and VIII, Silla's territorial expansion into the Gaya area is one of the best examples of the role of warfare in the course of Korean state formation.

The Saro polity, located in the southeastern part of Korea around modern Gyungju city, was one of the 12 independent Jin Han polities, according to the *San quo chi*. The Saro polity did not receive any particular attention by the Chinese until the end of the third century A.D. The presence of Jin *guk*, the collective name for polities located in the southern Korean peninsula, was mentioned in the *Shi chi*, the oldest Chinese Standard Historical Document compiled by Ssu-ma chien at the beginning of the first century B.C. As mentioned above, Saro is believed to be a descendant of the Jin *guk*. If we cross-examine the *Shih chi* with the *San quo chi* in terms of the chronology of the Jin *guk*, it is not too difficult to figure out that the Jin *guk* was the predecessor of the Jin Han. According to the Josun section in the *Shi chih* (Ssu ma chien 1987:3-4),

There was Jin *guk* next to Jinbun, they sent a letter to Han China court and showed an intention to see the [Han] Emperor. But they could not do so, [because] Wiman Josun, located between them [Han China and

Jin *guk*], interfered and blocked off the road [Ssu ma chien 1987:3-4; translation by the author].

This statement is very important because, as mentioned earlier, the *Shih chi* was compiled at the start of the first century B.C. (Chang 1986:4). Therefore, this statement clearly indicates that there were already political entities in southern Korea strong enough to desire to send diplomatic missions to Han China at least by the end of the second century B.C. Unfortunately, however, we do not know whether the *Jin guk* was a specific polity or a collective term for polities located in south Korea. As a consequence, the exact geographic location of the *Jin guk*, either as the collective polity or as a particular polity, is also unknown.

According to another chronicle appearing in the Sam Han section of the *San quo chi*:

During Wangmang's [reign, during Sin China, intermediate dynasty between the Former and Later Han] Gi Hwang (20-22 A.D.), Yeom Sa Chi, who was Wooguhsa [local official] in Jin Han heard that Naklang had very fertile land and its people were rich. So, [he] desired to escape [from Jin Han] to come to give himself up to [the Naklang]. He departed from his village, and along the way he saw one man was scaring sparrows away in the field. [Recognizing] his language was different from that of [Jin] Han, [Yeom Sa] Chi asked [What happened]. He replied, "We are Chinese, my name is Horae. While fifteen hundred of us were logging, we were attacked by [Jin] Han. We had our hair cut and became slave, and three years have passed since then." [Yeom Sa] Chi said, "I am just about giving up myself to Chinese Naklang. Aren't you willing to come?" Horae said, "Yes." [Yeom Sa] Chi of Jin [Han] took Horae along the way and arrived Hamja Hyun [an unknown place in Naklang]. [Hamja] Hyun reported this to [Naklang] Gun. The administrator of the Gun [Hamja Hyun] let Chi be a translator, and had him board on a big ship at Geum Jung [port] on the way to Jin Han to take those of Horae's peers back who had surrendered [to Jin Han]. Although they took 1000 people back, the rest of 500 people [out of 1500] already died. At this time, [Yeom Sa] Chi

made clear himself to Jin Han, "You give us the 500 people back, or the Naklang will send several thousands of warriors on big ships and attack you." [The administrator of] Jin Han said, "Five hundred people already died, we are immediately responsible for the compensation." Thus Jin Han contributed 15,000 people and Byun Han contributed linen 15,000 rolls. [Yeom Sa] Chi took them and came back to [Naklang] Gun right away. [The Naklang Commandery officials] Made a public recognition of [Yeom Sa] Chi, and bestowed him an official cap, fields, and a house which his descendants handed down for many generations. When it reached the fourth year of the Yeon Gwang reign of Emperor An (125 A.D.), his descendants were exempted from the labor draft because of that [their ancestor's contribution to Naklang] [Chen shou 1987:193-194; translation by the author].

This chronicle causes some confusion. One of the most important issues is that this appears not in the Jin Han but the Ma Han part of the *San quo chi*. Yet, as can be seen in the chronicle, Jin Han appears several times. Thus, a Korean historian has argued that the term Jin Han in the text really means Ma Han, based upon the overall historical context and the contents of the *San quo chi* (Yi 1934, cited in Im 1959 and Kim, J. B. 1976). In contrast, some other Korean scholars deny this scenario and argue that the 'Jin Han' really means Jin Han, as the predecessor of the Silla Kingdom, based upon a straightforward interpretation of the historical account and some archaeological evidence (Kim, J. B. 1976). Although there has been controversy over the exact location and political affiliation of the *Jin guk* (Yi 1959:262-279), it is widely accepted that *Jin guk* was located in the southeastern portion of Korea (Im 1959; Kim, J. B. 1968; Lee, K. B. 1990) and later transformed into Jin Han and Saro, one of 12 Jin Han polities that eventually became the Silla Kingdom (See Figure 9). It seems that the latter interpretation has been generally accepted, and this dissertation adopts it, although the question is still open to debate (e.g., Lee, H. H. 1984:42-43).

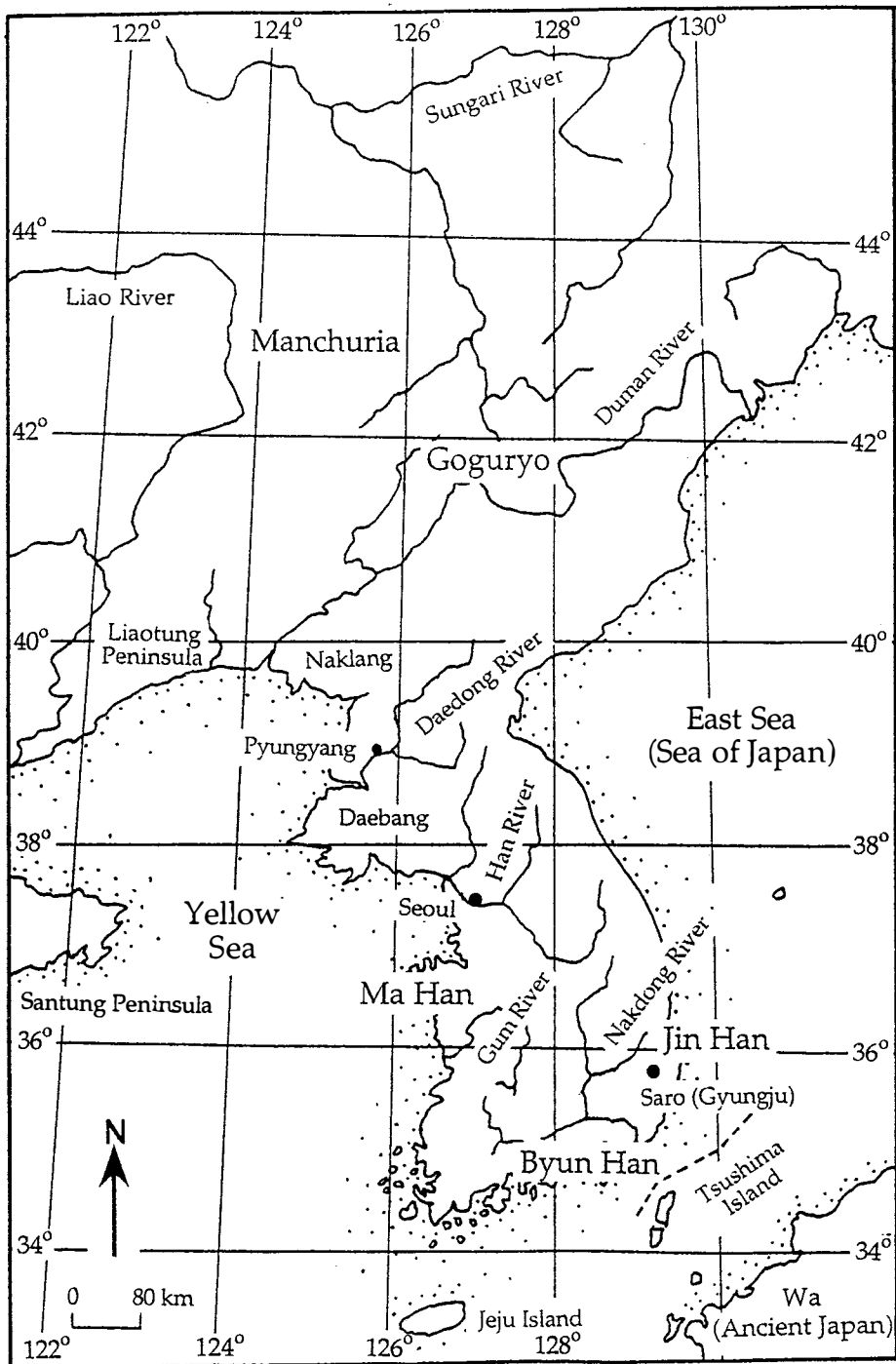


Figure 9. Map showing locations of the Sam [Three] Han societies in Korea.

Overall, the above chronicle is considered to be exaggerated and distorted in favor of Naklang Commandery (Im 1959:22-23), yet it provides a clear picture of relations between the Naklang Chinese and indigenous people in Korea at the beginning of the first century A.D. (Gardiner 1969:22). This historical account from the *San quo chi* carries a great deal of description of the sociocultural, political, economic aspects of the Jin Han in particular and the Sam Han in general. First of all, this incident took place between Naklang and Jin Han sometime between 20-22 A.D., during the Sin dynasty, an intermediate Chinese dynasty between the Former and Later Han. Even if we are not able to identify which polity out of the 12 Jin Han polities was involved in this dispute and transaction with Naklang, and are unable to pin down its geographic location, we know that Jin Han, as a collective entity, existed during that time period. More specifically, the Saro polity, as a member of the Jin Han 12 polities, probably existed in this time period as well, since Saro was a member of the 12 Jin Han polities.

Judging from this chronicle, we see that at least one or more polities out of 12 Jin Han polities could muster an army strong enough to attack and capture 1500 Naklang people who encroached on their land to log the forests. Another important element implied in the chronicle is that Jin Han society was hierarchically stratified. That is, Yeom Sa Chi retained either a local or central government official position, apparently inferior to chief but superior to commoners, before his departure to Naklang. The presence of slaves is also identified. Piecing all these things together, we can conclude that the society was hierarchically organized as follows: king/chief, local/central

government officials, commoners, and slaves. This strongly suggests that Jin Han had reached at least a chiefdom level of social organization.

Some information concerning population size, linen production, a sea route from Naklang to south or southeastern Korea, and a possible political affiliation between Jin Han and Byun Han is also offered. It is interesting to note that in the Wa (ancient Japan) section of the *San quo chi*, there is mentioned a sea route from Naklang and Daebang to Wa (Japan), which approximately corresponds to the sea route appearing in Yeom Sa Chi's biography.

There is another interesting chronicle concerning Jin Han in the *San quo chi* as follows:

That *Jin Han* was old Jin guk. At the beginning, when Wooguh [king of Wiman Josun] was not beaten [by Han China], Yeok ge-gyung, the minister of [Wiman] Josun, attempted to persuade [King] Wooguh [to reconcile with the Former Han China], but it [his suggestion] was not accepted. [The minister] Went to east to *Jin guk*. At that time, approximately 2000 people left home and followed [him]. And also [the people] did not interact with [Wiman] Josun and Jinbun [Chen shou 1987:280-298; emphasis added, translation by the author].

To begin, there is no doubt that this chronicle is concerned with Jin Han. According to the context of the *San quo chi* and judging from general historical circumstances, these events apparently took place at least at the end of the second century B.C., because Wiman Josun was not conquered by the Former Han China until 108 B.C. Therefore, these historical accounts provide evidence to support the argument that the *San quo chi* records many historical events that took place long before the third century A.D., when it was compiled. More importantly, this indicates that a few strong polities

already existed in southern Korea long before the first century B.C.; at least one or two polities attempted to make contact with the Han China court; and they were strong enough to be recognized by the Former Han court, according to above historical accounts.

On the basis of this limited textual information, it is hard to establish much about the developmental basis of Jin *guk* and Jin Han. Neither Korean nor Chinese sources provide any indication of when, how, and why the polities came into being, or what was happening in the course of their development. It seems clear that there were a few sociopolitically advanced polities in southern Korea at that time that attempted to make direct contact with Han China, which probably existed in a larger field of tribal societies or possibly chiefdoms.

There is a possibility, reinforced by archaeological evidence, that Jin *guk* and a few other polities located in the study area and adjacent areas may have reached chiefdom level, as mortuary offerings (e.g., many impressive bronze mirrors, daggers, and ornaments) discovered in south Korea suggest (e.g., Eheundong, Gujungdong, Ibsilri, Joyangdong, Yangdongri) (Choi, J. G. 1979a, 1979b, 1981; Research Institute for Antiquities 1989; Youn 1987). These archaeological sites are good candidates for the locations of some of the polities of Jin Han. Without more textual data and more specific and convincing archaeological data, however, we are unable to determine the exact geographic locations of *guk* mentioned in the texts, or associate them with particular archaeological sites in the southeastern portion of the Korean peninsula (Barnes 1990:124). Nevertheless, according to the combined historical and archaeological evidence, there is a strong possibility that Jin *guk*

may have been a predecessor of the Jin Han, which was one of the Three Han in a later time period in southern Korea.

As stated earlier in this chapter, the name of the collective polities of *Jin guk* appears in the *Shi chih* only at the end of the second century B.C. Based upon this, some Korean historians have presumed that there were two homogenous polities on the Korean peninsula, Wiman Josun in the north, and *Jin guk* in the south, between the second century B.C. and the beginning of the Christian era (Lee 1986:24). This is misleading, however, because (as the preceding discussion shows) it is highly likely that there were many independent polities in south Korea during this period, and *Jin guk* was either one relatively strong polity out of many polities, or all the polities in south Korea were collectively called *Jin guk*. I believe the latter interpretation is more reasonable. There may well have been chiefdoms in southern Korea from the second century B.C. onward, but it is highly unlikely that there was a centralized government (i.e., a state level society) that was able to control the entire southern peninsula, as implied by the presumption of two political entities (i.e., Wiman Josun in the north and *Jin guk* in the south).

Wiman Josun probably reached state level society before the end of the second century B.C. (Choi, M. L. 1983:161-169, 1985:65-76; Kim, J. B. 1986:24-46). There is some textual and material evidence to support this thesis (Choi 1983, 1985; Kim, J. B. 1986). In the case of the *Jin guk*, however, the polity may probably reached at most the chiefdom level.

In sum, the overall sociopolitical environment of pre-Silla times around the study area can briefly be synthesized in the following way: The

Saro polity, as a member of either *Jin guk* or *Jin Han*, existed at least from the end of the second century B.C. onward in the southeastern part of the Korean peninsula, as is mentioned in the *Shih chi* and *San quo chi*. The Saro (either a maximal tribal society or chiefdom around the beginning of the Christian era) continued to evolve and ultimately transformed into the Silla Kingdom as a state-level society between the middle of the fourth and the middle of the fifth centuries A.D. I believe that the Saro polity essentially remained at the chiefdom level until Silla Kingdom times. This is manifested in the historical documents as cited above, and is reinforced as well by the archaeological record discussed below.

In particular, according to the Korean historical document, *Samguk sagi*, Saro changed its name to Silla in the middle of the fourth century A.D., during King Naemul's reign, as the Saro polity was becoming bigger and stronger in terms of territory and sociopolitical systems. This historical notice strongly indicates that the transition from chiefdom to state-level society in southern Korea took place sometime during the fourth century A.D., as shall be argued further on the basis of archaeological data in chapter VIII.

Reconstruction of Social Stratification of Pre-Saro [Dolmen Period] Society Based on Archaeological Data

An unprecedented number of prehistoric archaeological sites have been discovered in south Korea since the early 1970s. Despite this, archaeological sites from Palaeolithic through Neolithic have, until very recently, not been reported in the study area. Recently, however, two Neolithic archaeological sites located in the same province as the Saro were

Neolithic archaeological sites located in the same province as the Saro were discovered and excavated. The Hupori site, located approximately 140 km north of the current city of Gyeongju (the capital of the Silla Kingdom), was excavated by Gyeongju National Museum in 1991 (Gyeongju National Museum 1991). This Neolithic site is situated on the coast of the Eastern Sea (Japan Sea). Judging from the site location and discovered materials, this is a typical Neolithic archaeological site, since almost all Korean Neolithic sites known elsewhere have been found near coastal lines or along the big rivers, the available data indicating marine or riverine oriented subsistence patterns with almost no evidence of agricultural practices.

Another Neolithic site, Songjukni, excavated by the Gyemyung University Museum (1994), is located approximately 40 km west of the study area. This site is especially important because it is the very first Neolithic site found in such a remote inland area (Gyemyung University Museum 1994). The site yielded a great many archaeological features such as semi-subterranean pit houses, open hearths, possible ceramic production areas (i.e., a kiln), stone tool making areas, and various kinds of artifacts. These included many different types of pottery, stone arrowheads, stone axes, stone sickles, clay net sinkers, and grinding stones (Gyemyung University Museum 1994:49-51).

The archaeological record strongly supports the premise that the site had been continuously occupied from the Neolithic through Bronze ages (Gyemyung University Museum 1994). Thus, the site will play a critical role in future studies of the transition from the Neolithic to the Bronze Age in Korea. Although these sites lie somewhat outside the study area, they

strongly suggest the possibility of finding similar Neolithic and Bronze Age developments in the study area itself.

Although the Neolithic archaeological evidence remains to be better investigated, there is abundant evidence for the presence of Bronze age sites in the study area. That is, dolmens, one of the most popular burial types during the Korean Bronze age, are identified almost everywhere in the study area (Gyungju County History Compilation Committee 1989:120-137).

Generally, the Korean Bronze Age is considered to have existed approximately from the eighth century to the fourth or third centuries B.C. It is widely accepted that the Bronze Age culture of Korea is largely associated with Mumun (coarse or undecorated) pottery, with polished stone artifacts (e.g., arrowheads, daggers, adzes, semi-lunar reaping knives) in association with grave goods deposited in dolmens, and with probable agricultural practices supplemented by hunting and gathering. Thus it was during the Bronze age that human inhabitants of the study area began to dramatically increase.

A great amount of research has been conducted by Korean and Japanese archaeologists concerning dolmen burials and their implications for sociopolitical level of development in the study area and Korea in general. Archaeological discussion of the question of social stratification in the pre-Silla Saro polity starts with the appearance of the dolmen. One Korean historian involved in the study of the evolution of the Silla Kingdom equates the appearance of dolmen society in the study area with the emergence of a complex society (Lee, J. W. 1982:17, 36). Unfortunately, this hastily drawn conclusion results from Lee's misunderstanding of Pearson's (1976 -1978)

paper concerning the transition from dolmen society to the state level in southwestern Korea (Lee, J. W. 1982:17, 29). According to Lee, J. W. (1982), state level society appeared in the study area much earlier than most Korean and Japanese scholars think.

Thus, before we examine the factors and mechanisms responsible for the culture change that occurred in the study area, it is necessary to examine the level of complexity of the early Saro polity and its neighboring polities. This is best approached by using primarily mortuary data (i.e., dolmens, stone-cist burials, and pit-burials with wooden chambers) discovered in the study area and its vicinity. It is important to determine whether the dolmen society in the study area, and Korea in general, reached the chiefdom level or remained more egalitarian.

This is a critical issue for the present research, because if dolmen society had indeed already reached the chiefdom level, the succeeding level of state formation in the study area could have appeared at a much earlier time than many people presume (e.g., between the first century B.C. and the first century A.D., as mentioned in the *Samguk sagi*). Therefore, although a detailed study of dolmen society in Korea is beyond the scope of this dissertation, the level of complexity that the local dolmen society reached needs to be fully investigated.

As far as the sociopolitical level of Korean dolmen society is concerned, there are two arguments. The first is that Korean dolmen society is associated with the chiefdom, and the second is that Korean dolmen society remained egalitarian. This is becoming one of the very sensitive and hotly debated issues among Korean archaeologists and historians.

A group of Korean archaeologists who have argued that Korean dolmen society in general had reached the chiefdom level derive their conclusion on the basis of such archaeological phenomena as energy expenditure needed to erect heavy capstones, presence of strong political organization needed to draft labor workers and to administer the mortuary practices, surplus food needed to support labor workers, redistribution of food, division of labor (craft specialization, long-distance exchange, presence of impressive artifacts (e.g., polished stone arrowheads and daggers), and a relatively small number of total dolmens for a long time period in Korea (Choi, M. L. 1983:198-237; Lee, J. W. 1982:28-48, 1994:107-112; Lee, K. B. 1990; Lee, S. J. 1993:112, 176-183; Nelson 1993:147-150; Rhee 1984; Rhee and Choi 1992:72-77).

On the other hand, another group of archaeologists have argued that Korean dolmen society was generally egalitarian (Barnes 1990:145, 1993:164-167; Kang 1990, 1992, 1993b; Kim, J. B. 1986:191-192, 221; Lee, N. S. 1985; Pearson 1976-1978). Against their competing chiefdom theorists, this group of scholars draws their conclusion on the basis of the following archaeological observations: the majority, if not all, Korean dolmens are quite small in scale (capstone length, range 0.02-5.28 m³, mean 1.38 m³, standard deviation 1.33 m³, n=37; Kang 1990:Table 4). Although there are a few impressive dolmens identified in Korea, they are rare; even if some dolmens show a great amount of energy expenditure, people may have voluntarily cooperated to erect those tombs without involvement of centralized political power, as we can see in contemporary Korean people's common mortuary practices (Kang 1990; Joussaume 1988:298). Although artifacts discovered in Korean dolmens

show some quantitative difference as compared with finds in non-dolmen burials (i.e., in numbers of polished stone arrowheads and daggers), no qualitative difference has been identified. Furthermore, few dolmens yield any artifact(s) at all, and even fewer dolmens yield sumptuary artifacts which can support an argument for social stratification.

Another important issue is that the dolmen was not the only burial type during the Bronze age in Korea. Other burial types, such as the stone cist and stone-lined tomb, are also believed to have coexisted with dolmens during the Korean Bronze age. Since these graves are generally small in scale, it is evident that not much energy was expended on constructing them. Ironically, however, it is the stone cists and stone-lined tombs that yield many impressive artifacts such as bronze daggers, bronze mirrors, other bronze utilitarian and/or non-utilitarian artifacts, and decorated pottery (e.g., red or black polished pottery vessels). What this shows is that there is no correlation between energy expenditure and deposition of grave goods.

Interestingly though, there does appear to be a correlation between the presence of artifacts in dolmens and the size of their capstones (Kang 1990:81-82). That is, the size of capstones under which mortuary offerings were deposited is greater on average than that of capstones not associated with grave goods. This might be taken as an indicator of the presence of social differentiation within dolmen society itself. But we cannot rule out the possibility such social differentiations may have been caused by sex and age differences or by the supernatural ability of the burial personage, symptoms which are common even in typical egalitarian societies. It should be noted in this context that the quality of the artifacts deposited in dolmens (e.g., mostly

polished stone artifacts) is not impressive in comparison with that of bronze artifacts recovered from stone cists or stone-lined tombs. Although recently a few bronze artifacts have been recovered from dolmens, the percentage of the total number of artifacts to the total number of excavated dolmens is negligible. Nelson (1993:133) attributed the lack of bronze artifacts in dolmens to looting. As was pointed out, however, even intact Korean dolmens do not yield many artifacts. Therefore, it is premature to postulate that the Korean dolmen society reached chiefdom level solely on the basis of the relationship between the presence of artifacts in dolmens and the size of capstones, and a few other archaeologically unjustified assumptions such as long-distance exchange, craft specialization, or redistribution of food.

Choi (1983) has analyzed the problem of sociopolitical level of dolmen and stone-cist burials as follows:

As I see them, all the socio-economic and political features of Korean dolmen society accord well with this definition of the chiefdom stage. Problems arise, however, in making conclusions such as this, due to uncertainties surrounding the relationship between the aboriginal dolmen builders and the stone cist builders, as was previously discussed....[T]he stone cists are greatly outnumbered by dolmens but yield artifacts which indicate much greater wealth and luxury. These artifacts include items such as bronze daggers, mirrors and shield-shaped artifacts, and thus indicate a highly-developed bronze casting technology as well as the high social ranking of the individuals within whose grave they were placed....Finally, we can note that *if stone cist builders were contemporary with dolmen builders, and if there were no conflicts between them, then apparently the stone cist builders were superior to the dolmen builders in terms of prestige, and technical advancement, and they may have assumed hereditary status as political or religious leaders* [Choi 1983:98-99; emphasis added].

Thus, when comparing the quality of bronze artifacts and red or black polished pottery vessels recovered from the stone cist and/or stone-lined tombs with grave goods recovered from megalithic dolmen tombs, it appears that the culture of the stone cist tomb builders was more advanced than that of the megalithic tomb builders. If we accept Choi's (1983) analysis, the stone cist builders must have occupied a higher level of rank in the contemporary society. In other words, the stone cist graves, rather than the dolmen graves, probably indicate hierarchical status. Furthermore, this reasoning implies that the dolmens may not have been related to stratified society (i.e., chiefdoms) at all.

Another problem is the great number of dolmens in Korea. While no adequate count has been compiled, the number is impressive. Nelson (1993:150) has argued, however, that there were probably no more than 50 dolmens a year built within Korea as a whole, this figure suggesting to her that dolmens were actually relatively rare, and thus interpretable as a tomb type reserved for only the upper class (e.g., chiefs and their relatives). But the method by which she arrived at this estimate is highly problematic, and only causes more interpretive problems, not solutions. Nelson came up with a figure of 100,000 dolmens for Korea as a whole by reasoning that about 50 a year were being constructed over a period of 2000 years. The first problem with her calculations is that the figure of 50 dolmens per year is entirely speculative. The second problem is that the 2000-year period for dolmen construction in Korea is anchored at the early end by only a single C-14 date (Nelson 1993:Table 5.1). Such a long time span for the dolmen culture is currently unacceptable to the majority of Korean prehistorians, though there

no agreement on exactly when and how the dolmen appeared in Korea. Thus, Nelson's estimates have no trustworthy empirical basis at all.

Even if Nelson's calculations were accepted, moreover, her quantitative argument is highly implausible. The total number of dolmens (100,000) she arrives at is far too many for them to be associated with chiefdom-level mortuary practices. For instance, the Silla Kingdom, including the pre-Silla Saro period, persisted for nearly 1000 years, and the Silla people left many impressive high mound tombs in Gyungju and its adjacent area, in addition to the Saro period dolmens. But the numbers of such burial constructions actually found there do not remotely approach the thousands that would be implied by applying Nelson's figures to the area. In short, I simply find Nelson's arguments completely untenable.

With reference to some other authors' arguments, the distribution of dolmens over the landscape in the Korean peninsula does not seem to support the argument for their relation to hierarchical society (Kang 1990:83-94; Pearson 1976-1978:88-89). In the first place, dolmens are found almost everywhere in Korea, even in remotely isolated areas (Lee, N. S. 1985). Let us hypothetically assume for the sake of argument that the Korean dolmen society reached chiefdom level and that the dolmens were reserved for the rulers and their families. A question that naturally follows is, how many chiefdoms were there, and where were all those chiefdoms located?

By definition, chiefdoms are considered to have at least a two-tiered administrative hierarchical structure, which means a socially and politically centralized society. They are also characterized by clearly defined social hierarchies exhibiting evidence of marked social stratification with sharp

economic and political distinctions between the elite and the mass of the common people (Creamer and Haas 1985:741). No such evidence has been identified for the Korean dolmen society. The dolmens are widely distributed in Korea indeed. Essentially, they are randomly distributed, and do not show any clusters to indicate the presence of a hierarchical society (Kang 1990; Pearson 1976-1978).

It is worthwhile to look at an example. Recently, an interesting dolmen cemetery was excavated by Gyungnam University Museum (1993). This site is located approximately 100 km south of the study area in Dugchunri Dongmyun in Changwon, South Gyungsang Province. Since the dolmens are of the same type as those in the study area, we are able to obtain some archaeological insight into the mortuary practices of dolmen burial.

An intensive excavation was conducted over a total of 30,000 m² area. In this site were excavated three dolmens, 12 stone cists/stone-lined tombs, five pit-burials with stone lids, and some other miscellaneous features. Thus, this site provides very important information about the relationship between the dolmen culture and the stone cist and stone-lined tomb cultures in terms of chronology, social stratification, and mortuary practices.

According to the preliminary archaeological site report, the three dolmens discovered in this site indicate a huge amount of physical labor in their construction. Dolmen No. 1 measured 8.0 x 6.0 x 4.5 m (216 m³) in burial dimension, while Dolmen No 2. measured 6.0 x 3.5 x 3.0 m (27.3 m³). Dolmen No. 3 (Burial No. 5) is slightly different in its structure. That is, an artificial earthen mound (diameter 6 m, height 0.4 m) was built first; the builders then dug a pit (3.0 x 1.6 x 0.5m) on the mound, built a stone-lined chamber (1.25 x

0.5 x 0.5 m = 0.31 m³), and put a capstone on top of it. The builders used a great number of boulders and a few large and stone slabs to build the three dolmens. Another unusual and interesting feature of the Dugchunri site is the archaeologists discovered a big stone structure (a kind of palisade, enclosing an area of 56 x 17.5 m) surrounding Dolmen No. 1. Some of the stone structure has been disturbed by agricultural practices, but the excavators believe that this enclosure must have been constructed for the No. 1 Dolmen. Taking all this together, we can conclude that a tremendous amount of energy was expended on those three dolmen.

Dolmen No. 1 yielded 20 polished stone arrowheads, five tubular jades, and two unknown wooden artifacts. Dolmen No. 2 yielded one decorated pottery vessel (red-polished jar) and 165 tubular jades. The excavators recovered one decorated pottery vessel (red polished pottery) from Dolmen No. 5. On the basis of all the archeological observations concerning the dolmens in the site, the excavators came to the conclusion that the dolmen society attested at the site had reached a chiefdom level (Gyungnam University Museum 1993). At first appearance, this seems to be the archaeological evidence needed to associate the dolmen with the chiefdom level. But, as will be discussed below, the above does not comprise sufficient evidence to associate the dolmen burials with chiefdom level society (Choo 1994:349; Gyungnam University Museum 1993).

At the same time, the Dugchunri site excavators reported 12 stone cists/stone-lined tombs and two pit-burials with stone lids with accompanying grave goods. The discovery of these burials accompanied by grave goods provides a good opportunity to compare the two different burial

types (i.e., dolmen versus stone cist) in terms of mortuary practices and level of sociopolitical complexity. The mean of each dimension of the 12 burials is: length 2.07 m, width 0.79 m, and depth 0.41 m. Recovered artifacts from the burials consist of decorated pottery (polished red pottery), polished stone daggers, and stone arrowheads. In particular, Stone Cist A yielded one fiddle-shaped bronze dagger, often called the Manchurian- or Yonyung-type bronze dagger in Korea, a polished-red pot, and a polished stone dagger. The size of this stone-cist is a little bigger ($2.5 \times 0.75 \times 0.7 \text{ m} = 1.31 \text{ m}^3$) than the mean of the other stone cists/stone-lined tombs in the site, but it is considerably smaller than the burial dimension of the Dolmen No. 1 (216 m^3). Moreover, the stone cist does not have a capstone. Yet, the artifacts discovered from Stone Cist A are at least not as impressive as those discovered from Dolmen No. 1.

Overall, there is no significant difference between the dolmen and the stone-cist in terms of the quantity and quality of the grave goods. That is, differences in wealth and status between the represented burials are largely negligible. More importantly, there is some contradiction between the dolmens and the stone-cists excavated in this site in terms of energy expenditure and deposition of grave goods. That is, people expended a great amount of labor to build the dolmens, yet they did not offer many impressive artifacts in them. In the mean time, they expended less labor to build the stone cists, but they deposited more or at least not less impressive artifacts than those discovered from the dolmens. The three dolmens excavated in this site yielded a few grave goods, as described above. This strongly indicates

that there is no correlation between energy expenditure on tomb construction and deposition of grave goods in them.

By looking at the overall artifact assemblages (e.g., polished stone arrowheads and daggers and decorated pottery), the two burial types (i.e., dolmen and stone cist/stone-lined tomb) can be regarded as contemporary. Thus, it seems that not dolmen builders but stone-cist builders retained a higher sociopolitical rank according to this archaeological site, as was discussed above in conjunction with Choi's proposition.

A more important issue should be noted here: No matter how impressive the excavated archaeological features and artifacts are, archaeological data recovered from a single site are not sufficient to postulate the presence of complex society (i.e., chiefdom). Complex societies (i.e., chiefdoms and states) are rarely isolated. The general premise is that complex societies are interconnected and interdependent in terms of socially, politically, and economically.

To identify the presence of a hierarchical social organization in the archaeological record, we must be able to find evidence not only in the material remains but also settlement patterns associated with interdependence. In this sense, the research method to determine the level of sociopolitical complexity of the Korean dolmen should be seriously reconsidered. In the first place, Korean archaeologists emphasize the excavation of more dolmen burial sites rather than residential sites. That is, Korean archaeologists have concentrated on excavation of single small-scale dolmen sites rather than regional settlement sites. As a result, almost no habitational sites where the dolmen or other burial builders may have lived

have been reported. Furthermore most archaeological research on the dolmen in Korea has been focused on building cultural chronologies with issues concerning prehistoric cultural influence and culture change approached through straightforward interpretation rather than problem-oriented research designs.

This rather biased research orientation is mainly caused by the fact that dolmens are more visible on the ground than many other archaeological features placed under the ground, such as habitational sites and other types of burial. Some burial types of the Korean Bronze age (i.e., stone cist and stone-lined tomb) and the later time period, (i.e., pit-burial and pit-burial with wooden chamber) have been excavated rarely. These types of burials are usually discovered by accident. This situation has resulted in a critical sampling bias. The total number of these types of burials discovered in the study area is far less than that of the dolmens, which fall outside of the time period of interest. Because of this bias, a critical line of evidence in distinguishing egalitarian (i.e., bands and tribes) from complex sociopolitical systems (i.e., chiefdoms) is difficult, if not impossible, to draw with the archaeological data currently available. Therefore, it is desirable to look at the dolmen society from a bigger picture (i.e., regional level), especially since coexistence of dolmens and stone cists of contemporary burial type at the same site are not uncommon in Korea. Some work needs to be conducted to investigate the exact relationship between the complexity level between the cultures of dolmen builders and stone cist and stone-lined tomb builders.

Another question that should be raised is that if dolmens were reserved for chiefs and their families, why the practices of dolmen building

ceased and was replaced by different types of burial (i.e., pit-burial or pit-burial with wooden chamber or wooden coffin as shall be discussed below), while the prehistoric societies were moving toward more complex forms. In particular, new tomb types are considered to be less demanding in terms of energy expenditure, yet they yield many more impressive artifacts than dolmen do. Indeed if dolmens were constructed for elites, the dolmen construction should have continued as general social organization was becoming more complex over time.

In sum, there is no evidence to support the argument that the dolmen society in the study area and Korea in general reached chiefdom. More importantly, the transition from dolmen society to pit-burial is not clearly understood. That is, did the dolmen society independently continue to develop and adopt different tomb types (i.e., the pit-burial), which eventually caused a socio-political transformation (e.g., from chiefdom to state), or, were the dolmen cultures replaced by different people (e.g., migrations from north when Wiman attacked Gija Josun or even refugees from Jin China) with overall advanced culture? Korean archaeologists have assumed that many pre-Wiman Josun people or even Chinese people migrated into the study area, especially Gyungju (the capital of the Silla Kingdom) and its adjacent areas, as described in the *San quo chi*, the *Samguk sagi*, and the *Samguk yusa*. They are assumed to have caused a significant culture change in the Saro area, as well as both in the overall Jin Han and Byun Han areas from the end of the second century B.C. onward. Korean archaeologists usually associate the appearance of pure pit-burials and abundant sumptuous mortuary offerings with migration from north (e.g., Gija or Wiman Josun people, or

even any small independent polities located in northeastern China). Thus, it is widely accepted that dolmens ceased being built around the third or even second century B.C., and new burial types, such as pit-burial, and a few sub-types (e.g., pit-burial with wooden-chamber and pit-burial with wooden coffin) accompanied by Chinese bronze mirrors and other definitely non-locally produced various kinds of bronze ornaments was introduced to indigenous people. In Gyungju and its adjacent area, it is the pit-burial and its sub-types that yield many impressive artifacts. Thus, this culture group instead of dolmen builders, should be considered to have reached the level of chiefdom.

A critical problem should be pointed out here. Even the pit-burial with wooden chamber society does not show any accompanying substantial archaeological features or artifacts sufficient to postulate the presence of a chiefdom-level society except for some bronze artifacts. Some Korean historians, who already ascribed the dolmen society to chiefdom, hastily concluded that the pit-burial builders may have reached a state-level society on the basis of very impressive bronze and other non-locally produced artifacts discovered in Joyangdong Gyungju and Dahori Euichang (Lee, J. W. n.d. cited in Pearson 1985:196; Lee, K. B. 1990:48). But, overall, archaeological evidence surrounding the pit-burial does not strongly support such argument. Pearson (1985), after observing some of those impressive Chinese bronze artifacts discovered from pit-burials in the study area made the following statement:

Temporally Burial No. 38, of the wooden chamber type, with 4 mirrors of the Former Han coincides with the 3rd stage of Silla political development postulated by Lee Jong-wook, when Saro was the leader

of the Chinhan [Jinhan] League, and served as a redistribution center for Chinese goods. However, *I do not consider this burial to be as large or complex as the burials of a state-level society*; it seems very similar to the prestate Yayoi burials of Japan. The level of complexity of native political units in the Korean peninsula may have to be reconsidered, *since the archaeological record does not yet clearly show state-level development* at the time period of the earlier portions of the *Samguk Sagi*, the first two centuries A.D. [Pearson 1985:196, emphasis added].

Since some Korean scholars, particularly J. W. Lee (1982) in the case of the study area, consider that the dolmen society reached chiefdom with rather minimal mortuary evidence, when they come across luxury goods such as bronze mirrors and bronze daggers found in pit-burials or pit-burials with wooden chambers in the study area (Joyangdong) and its adjacent area (Dahori), they interpret them as good physical evidence for the presence of a state-level society. Those prestige goods discovered in the study area apparently provide some indication for the practice of long-distance exchange and the presence of complex and centrally controlled economic systems. But, as was pointed by Pearson (1985) above, this archaeological evidence is not sufficient to postulate the emergence of a state-level society in the area. It may be difficult even to argue for the presence of a chiefdom based upon discovered artifacts alone. We cannot exclude the possibility that those artifacts may have been brought to the area by immigrants from elsewhere, which means that long-distance exchange controlled by chiefly organization may not have existed.

In short, there is not enough archaeological evidence to link the dolmen, with the Saro (pre-Silla) polity and postulate that the dolmen society continued to develop into the Saro polity. Chronologically, the dolmen culture existed prior to the pit-burial culture. It is difficult to know how and

why the dolmen culture disappeared and the pit-burial society appeared and what the relationship is between the two, although some Korean scholars argue that many immigrants from the northwestern part of Korea (especially Wiman Josun) to Gyungju and its proximity stimulated culture change, as mentioned above. In sum, I believe that the dolmen society in the study area as well as in the Korean peninsula did not reach the chiefdom level.

Summary

In this chapter, to reconstruct the complexity level of polities located in the study area, I reviewed both historical documents and archaeological data. It seems that there is agreement between literary sources and available archaeological evidence in assessing the sociopolitical complexity level of the study area. Examination of the Chinese historical documents *Shi chi* and *San quo chi* tells us that there were a few polities strong enough to attempt to contact the Former Han China at the end of the second century B.C., presumably in the study area. According to historical accounts concerning a political incident between Naklang and Jin Han at the beginning of the first century A.D., appearing in the *San quo chi*, there is evidence of a highly developed sociopolitical system (i.e., king–central government officials/central and local village leaders–commoners/slaves). Although superficially it seems that a few polities in the Sam Han region may have reached a state-level society, when the contents of the historical account is associated with Chinese word '*guk*,' appeared in the *San quo chi*, which literally means 'state' or 'country,' it is clear that this should not be considered as a 'state' but, at most as a 'chiefdom.' There is a high possibility

that a few polities among the 78 in the entire Sam Han region may have reached the chiefdom level, but the majority of the polities probably remained "tribal societies" until they began to be absorbed by big polities (i.e., the Silla and Baekje polities) from the first century A.D. onward.

In this sense, the Saro polity of the pre-Silla Kingdom was a chiefdom when Chinese people had informal contact with them, and it remained that way until the middle of the fourth century A.D., although the polity was undergoing a great deal of sociopolitical development. The assertions made by Korean historians and archaeologists that state formation occurred in the Saro area at least by the end of the second or the beginning of the first century B.C. is denied. Moreover, it has been argued that the tendency to consider that state formation took place earlier than many people think is due to the fact that some scholars consider the dolmen society to have reached the chiefdom level in the study area. This premise is not acceptable for many reasons.

To reconstruct the complexity level of the pre-Silla Kingdom according to the archaeological record, the dolmen and pit-burial cultures were investigated. From the examination of the dolmen society, it turned out that this society in the study area, and in Korea in general, remained egalitarian. On the other hand, a few pit-burials discovered in the study area and its adjacent areas were also investigated. Although some Korean scholars asserted that the pit-burial builders achieved a 'state-level' society, it is pointed out that there is not enough physical evidence exists to support their allegations. The association of 'the dolmen culture' with 'chiefdom,' and

'the pit-burial culture' with 'state' cannot be established. There is not enough archaeological evidence to support the linkage.

Taking into consideration the archaeological record available, it is argued that the dolmen remained egalitarian and the pit-burial builders of the Saro polity as the pre-Silla Kingdom achieved, at most, a chiefdom level and remained as such until the middle of the fourth century A.D.

CHAPTER VI

MECHANISMS INVOLVED IN STATE FORMATION: IRRIGATION WORKS AND LONG-DISTANCE EXCHANGE

Introduction

In general, three important mechanisms, warfare with population pressure in circumscribed environments, irrigation works, and long-distance exchange have drawn a great deal of scholarly attention in relation to the examination of the formation in many parts of the world. This dissertation argues that warfare played a key factor for the formation of the Silla Kingdom in ancient Korea. Yet, historical and archaeological evidence indicates the presence of some other potential mechanisms, irrigation works and long-distance exchange. These have been observed in the study area and southern Korea in general, indicating that they may have contributed to state formation in ancient Korea. Although irrigation and long-distance exchange may not be as important as warfare, their historical and archaeological manifestations must be addressed.

To examine the role of these two mechanisms in the course of the development of the Silla Kingdom, related historical documents, stelae, and some of the available archaeological data are discussed in this chapter. In following chapters, warfare documented in both historical accounts and archaeological records will be discussed in detail. These efforts will

eventually enable us to recognize significant variables in the development of the Silla Kingdom.

Irrigation

Irrigation agriculture theory, formulated by Karl Wittfogel (1955, 1957), has received a great deal of attention from anthropologists and archaeologists in conjunction with the question of state formation. In his influential book *Oriental Despotism*, Karl Wittfogel (1957) proposed a causal relationship in preindustrial societies between the construction, maintenance, protection, and supervision of large-scale irrigation works and the emergence of centralized political structures (i.e., state level societies). Since Wittfogel (1955, 1957) formulated the 'hydraulic hypothesis,' many people have emphasized the importance of the theory, although not all of them support it. His theory has been illustrated succinctly elsewhere (Earle 1978; Flannery 1972; Redman 1978; Wright 1978) and has stimulated a great deal of research not only in oriental societies, the major target of Wittfogel, but also other parts of the world (Adams 1966; Downing and Gibson 1974; Earle 1978; Lees 1973; Price 1971; Woodbury 1961). Whether the irrigation theory is generally applicable to explain the emergence of complex sociopolitical systems, a great amount of research has been influenced by it.

According to Wittfogel's theory, many interrelated variables accompanying large-scale irrigation works, such as water scheduling (calendrics), construction planning and labor coordination (administration), and protection of irrigation works from hostile neighbors or enemies in general (military organization) were responsible for the emergence of

centralized, bureaucratic social structures which Wittfogel termed "oriental despotisms." Although many people have used Wittfogel's hypothesis to explain the emergence of state-level society in terms of cooperative voluntaristic perspectives (Price 1971, 1977; Sanders and Price 1968:185, 234), many scholars have argued that large-scale irrigation works should be viewed as a result of state formation rather than as a cause. In other words, large-scale irrigation works were conducted only *after* the state had come into being, otherwise small-scale cooperative irrigation works were independently managed by local people for their own interest without intervention of elaborate social organization (Adams 1966:66-76; Brumfiel 1983:162; Carneiro 1970:734; Friedman 1974:462-464; Service 1975:273-275). In some cases, even if large and very sophisticated irrigation systems developed, state level societies never emerged, as in the example of Hohokam irrigation systems located north of the Salt River in Phoenix, Arizona (Woodbury 1961:557). Thus, some questions concerning the role of the irrigation works in association with the state formation remained.

In the case of Korea, it is accepted that rice agriculture was introduced to Korea from either north China or south China, or even from both directions simultaneously (Kim, W. Y. 1982) It is highly likely that prehistoric Korean people were introduced to dry-rice agriculture first (Kim, J. B. 1983:143). Although some prehistorians argue that rice agriculture was established in Korea sometime between 1500 B.C. and the end of the second millennium B.C. (Choe 1982:524-525; Kim, W. Y. 1982:517; Nelson 1982:538), many Korean prehistorians believe its introduction from China occurred between the tenth and eighth centuries B.C. (Im 1992:158-159; Sim 1991).

Although it is unknown precisely when wet-rice was introduced into the Korean peninsula, there is no doubt that it was cultivated at the end of the Bronze Age in Korea (ca. 400-300 B.C.). Since its introduction, wet-rice has been one of the most important crops in Korea throughout the entire prehistoric, protohistoric, and historic periods. Even today wet-rice agriculture is very important to Korean people.

While water is indispensable for any plant cultivation, wet-rice needs a tremendous amount up until it is harvested. Therefore, irrigation systems may have played a critical role in the success of wet-rice agriculture and other plant cultivation as well. In this section, the influence of irrigation works will be examined, based upon historical documents, stelae, and archaeological data and how much it contributed to the sociopolitical development of the Silla Kingdom will be discussed.

Historical Documents

The *San quo chi*

Since the Chinese document, *San quo chi*, does not provide any direct information concerning irrigation works, it is difficult, if not impossible, to know how irrigation works were constructed during the Sam Han period. Judging from the presence of rice agriculture, however, we may assume that the Three Han people may have constructed irrigation works. This Chinese historical document describes agricultural practices of the Sam Han region in general. For example, in the Byun Han segment of the Eastern Barbarian Section, the following historical account appears: "Land is fertile and

productive, and is good for Five Grains [millet, beans, wheat, broomcorn millet] *and rice*" (Chen shou 1987:196; emphasis added; translation by the author). Although this document is primarily concerned with the Byun Han region located on the southwestern and western sides of the study area, it is not unreasonable to assume that Jin Han [pre-Silla] and Ma Han [pre-Baekje] were also in similar circumstances in terms of agricultural practice. Thus some kinds of irrigation works may have been constructed in Jin Han and the other two Han regions. This will be discussed in the following archaeological section in more detail.

The *Samguk sagi* and *Samguk yusa*

The two Korean historical documents, the *Samguk sagi* and the *Samguk yusa*, contain a few accounts concerning both agricultural practices and irrigation works. All the chronicles except for one concerning irrigation works come from the *Samguk sagi*. Although the issue of agricultural practices and irrigation works that took place in the Baekje Kingdom is beyond the scope of this research, for analytical purposes, the chronicles of the Baekje Kingdoms as well as Silla Kingdoms are all discussed. These chronicles are not sufficient to reconstruct a true picture of irrigation works and agricultural practices of the two kingdoms in terms of the formation of the state, and it is only hoped that a few anthropological or historical interpretations can be formulated from this tantalizing evidence.

First, notices of agricultural practices and irrigation works conducted in the Baekje Kingdom were extracted from the *Samguk sagi* (Table 1). As we

Table 1. Agricultural Practices and Irrigation Works Recorded in the *Samguk sagi* for the Baekje Kingdom.

No.	Date (A.D.)	Name of King (year of reign)	Contents
1	5	On-jo (14th)	The King looked around villages and encouraged (people) to work hard on agricultural practices.
2	20	On-jo (38th)	Sent government officials to encourage people to work hard on agriculture and mulberry trees (for silk worm).
3	33	Daru (6th)	Ordered Southern Provinces and Counties of the Kingdom to begin making wet-rice paddy fields.
4	116	Giru (40th)	Ordered government officials to reconstruct [paddy fields] damaged by flood.

Above are not directly related to irrigation works.

5	222	Gusu (9th)	Ordered government officials to reconstruct reservoirs [dikes] and ordered people to work hard on agriculture.
6	242	Go-i (9th)	Ordered people to make wet-rice paddy fields at Namtaek (South Wetland).
7	472	Gaero (18th)	Ordered people to construct a bank following Hasu [river].
8	510	Munyeng (10th)	Ordered people to construct solid reservoirs and expelled people who do nothing but loaf to the fields [to work].
9	634	Mu (35th)	[Ordered people to] construct a pond at south of the palace and brought water from 20 <i>li</i> [8 km] away. (Note: This is not relevant for the study, because the purpose of the construction of this pond was not for agriculture but for landscaping).

Note: Translation by the author.

saw earlier, according to the *San quo chi*, the Sam Han people(s), considered to be predecessors of or contemporary with the Baekje and Silla kingdoms, cultivated "Five Grains and rice" (Chen shou 1987:196). Judging from the accounts, we can assume that the Baekje and Silla Kingdoms were not much different from the Sam Han people in terms of agricultural practices. In particular, since all the people depended heavily on agriculture, and food production was one of the most important economic resources of the polities, the rulers or political leaders, according to the *Samguk sagi*, were almost always concerned about peoples' agricultural practices. We can see this from chronicles one through four in Table 1. Thus, irrigation works may have played an important role in overall agricultural practices in the Baekje Kingdom.

Chronicle five in Table 1 indicates that reservoirs were already constructed before the third century A.D., and probably some of them had maintenance problems. So the king ordered government officials to *repair* them. Thus, it is unclear if the reservoirs were constructed to comply with a king's order, or they were made by voluntary cooperative labor forces before the Baekje Kingdom emerged. Even if we determine the context, with a rather limited number of historical records, it seems hard to postulate that irrigation construction works played a causative role in the development of state-level society in the Baekje Kingdom.

At any rate, chronicle five in Table 1 is the very first document which suggests that irrigation work may have been associated with the presence of a centralized authority. The important question here is, when did state level societies first appear in the Baekje area? Many conservative Korean

historians argue that Baekje Kingdom as a state level society did not appear until the twenty-seventh or twenty-eighth year of King Go-i (260-261 A.D.) (Lee, K. B. 1990:62; Yi 1959:349-351). If this is correct, irrigation works may have been constructed before the emergence of the state-level society, since irrigation work in the Baekje area appeared before the third century A.D. (see Table 1). Thus, it is possible that irrigation works in the Baekje area may have played a role in state formation. As shall be shown later, however, historical accounts concerning irrigation works in south Korea are less prevalent than those of warfare. This leads us to believe that the role of irrigation works for state formation was not critical in the course of the sociopolitical evolution in ancient Korea.

Chronicles one through four in Table 1 are not directly associated with irrigation works, but it suggests that a governmental authority may have drafted people to reclaim some arable lands. In a strict sense, the accounts in chronicles seven and eight are the only ones concerning real construction of irrigation works in the Baekje Kingdom. Since the Baekje Kingdom emerged no later than the middle of the third century A.D. (260-261), irrigation works constructed in the years of 472 and 510 indicate that such construction in this case was a result of state formation. Thus, the hydraulic theory may not be plausible at least for explaining the emergence of the Baekje Kingdom. It seems that the irrigation works were carried out only after state-level society emerged in the case of the Baekje Kingdom.

To examine the role of irrigation works in the study area (i.e., Silla Kingdom), some relevant historical accounts from both the *Samguk sagi* and

Table 2. Agricultural Practices and Irrigation Works Recorded in the *Samguk sagi* and *Samguk yusa* for the Silla Kingdom.

No.	Date	Name of King (year of reign)	Contents
Appeared in the <i>Samguk sagi</i>			
1	17 B.C.	Hyukguhse (17th)	Encouraged and urged [people] to practice agriculture and [domesticate] mulberry [for sericulture].
2	82 A.D.	Pasa (3rd)	Ordered government officials to encourage people to practice agriculture and sericulture.
3	90	Pasa (11th)	Sent ten special inspectors to investigate what Ju-Gunju has [local chief authorities] achieved and relegated those who were negligent of their official duties to supervise peasants who failed to look after their arable land for long.
4	144	Isung (11th)	Ordered all Ju [province] and Gun [county] to repair reservoirs and to reclaim arable land, "since agriculture is the fundamental of politics and foods are the only heaven of people."
5	187	Bulhew (4th)	Ordered Ju and Gun [local county] not to draft [people] to do civil works when it is farming season.
6	263	Michu (11th)	Ordered do away with things [civil works] that can disrupt people's agricultural practice.
7	318	Heulhae (9th)	Ordered "Everything [Harvest] was not good last year because of the drought. Now the soil condition is becoming ameliorated. Now is the time for agriculture. Therefore, stop things [civil works] to bother people."
8	330	Heulhae (21th)	At last, people constructed Byukgolji [Byukgol Canal] of which the length was 1800 paces [ca. 3240 m].
9	433	Nul Ji (13th)	[They] newly constructed Siji [Si Reservoir] of which the length was 2170 paces [3919 m].
10	531	Bubheung (18th)	Ordered government officials to repair reservoirs.

Table 2 continued

No.	Date	Name of King (year of reign)	Contents
11	790	Wonsung (6th)	Enlarged the Byukgolje [Byukgol Canal], government officials drafted labor workers from seven villages including Jeonju [to do the irrigation work].
12	810	Hunduk (2nd)	Sent a messenger to have reservoirs of the Kingdom repaired.
13	859	Hunan	Ordered people to repair and strengthen reservoirs and (4th year) encouraged [people] to practice agriculture.
Recorded in the <i>Samguk yusa</i>			
14	329	Heul Hae (20th year)	For the first, [people] constructed Byukgolje [Byukgol Canal] of which circumference was [at least] 17,026 paces [ca. 30,646 m].

Samguk yusa were selected (Table 2). First of all, in the Baekje Kingdom, rulers of the Silla Kingdom showed great concern about people's agricultural practices (Nos. 1, 2, 3, 5, 6, and 7, in Table 2). In the case of the Silla Kingdom, two early irrigation-related works appeared during the middle of the second and the fourth centuries A.D. respectively (144 A.D., No. 4 and 330 A.D., No. 8, in Table 2). A critical question here is when the Silla Kingdom as a state-level society appeared. As previously discussed, many Korean and Japanese historians believe the Silla Kingdom as a state level society appeared during the reign of the King Naemul (356-402 A.D.).

Historical account No. 4 in Table 2 is of particular interest. According to this account, the Ilsung King sent out an order to "repair" reservoirs in 144 A.D. This indicates that some reservoirs were already built before the

emergence of the legendary Silla Kingdom in B.C. 57, as recorded in the *Samguk sagi*. When we consider that the chronology of initial wet-rice agricultural practices in Korea began during the eighth century B.C., the possibility of this interpretation is high. This implies that irrigation works may have played a role in state formation.

In a sense, the historical accounts 8 and 14, recorded in the *Samguk sagi* and *Samguk yusa*, respectively, are the first historical accounts concerning initial reservoir construction carried out in the Silla Kingdom.

Unfortunately, however, they do not give us any detailed information of reservoir construction. That is, it is difficult to determine with the historical accounts alone if the reservoir was constructed by centralized authority or by cooperative labor forces of local people. It seems as if the canal was constructed through voluntary cooperative labor by local village people. Yet, the scale of the irrigation work is huge. It is hard to imagine that local people administered the entire project by themselves without involvement of a centralized authority.

Due to disagreements concerning the issue of irrigation structures, it is necessary to discuss the reliability of the *Samguk sagi* and the *Samguk sagi* in terms of references to irrigation works. More specifically, historical accounts Nos. 8 and 11 (see Table 2) have problems. No. 8 does not say anything about the geographic location of the Byukgol reservoir. It is natural to assume that the reservoir was located somewhere within the Silla Kingdom's territory, in the eastern portion of the Korean peninsula. Historical account No. 11, recorded in the *Samguk sagi*, says that "government officials drafted labor workers from seven villages, including *Jeonju*." This indicates that the

approximate geographic location of the reservoir is far from the Silla Kingdom territory. The problem here is that the current city of Jeonju is located on the opposite side of the Silla Kingdom. The city is almost in the heartland of what was the Baekje Kingdom. Besides the Byukgol Canal, which I visited and confirmed the existence of during the summer of 1993, is located in present Gimje city, near Jeonju city, and is still used by local wet-rice farmers. More detailed discussion of this canal will be presented below in the archaeology section.

Another problem with the two accounts is that there is a one year discrepancy between the *Samguk sagi* and the *Samguk yusa* in terms of the chronology of the construction of the irrigation system. There is also a significant difference between the two historical documents in terms of the length of the irrigation system (*Samguk sagi*: 1800 paces or 3240 m, *Samguk yusa*: 17,026 paces or 19,371 m, in historical documents 9 and 14, respectively). The length as it appeared in the *Samguk yusa* is probably a mistake for 1726 paces (3106 m). These two lengths are very close to the length of the present Byukgol Canal (ca. 3000 m) at the same location. These discrepancies are not critical, but, they certainly cast some doubt on the reliability of both historical documents concerning references not only to irrigation works and the emergence of the state formation in Korea, but, to other historical descriptions.

Historical accounts No. nine through No. 14 (see Table 2) indicate that large-scale irrigation works were constructed after the emergence of state-level organization at least in the case of the Silla Kingdom, although some of the irrigation work projects are related to their reconstruction or

maintenance. According to other historical documents compiled at later time periods, the Byukgol canal was also maintained and reconstructed a few times during the Korea Dynasty (1010-1031, 1143, and 1146 A.D.) and Yi Dynasty (1415 A.D.) (Youn 1976:67) under the direction of the centralized authority. This strongly indicates that in Korea the maintenance and construction of large-scale irrigation works were strongly associated with the presence of a centralized government.

In sum, relatively small-irrigation works were probably independently constructed and maintained by local people, since the irrigation works were closely related to wet-rice agriculture. As we saw in the Tables 1 and 2, the centralized government was concerned about agriculture and irrigation works in general, but it is hard to deduce that wet-rice agriculture was also controlled by the centralized authority. It would be fair to say that wet-rice agriculture contributed to state formation in terms of the management of surplus food. But, wet-rice agricultural practices, in terms of labor organization and management, cannot be regarded as causal factors for state formation. Basically, wet-rice agriculture was practiced by prehistoric people long before the emergence of complex societies (i.e., both chiefdoms and states). Since the irrigation works are indispensably related to wet-rice and other cultivated plants, I infer that prehistoric local people probably cooperated to construct those facilities for the purpose of acquiring maximum productivity per land unit and to protect their crops from failure in times of drought. That is, the irrigation works (e.g., dikes, check dams, and even moderate sized reservoirs or canals) must have been carried out by local people without involvement of a centralized authority. It seems likely that

irrigation works were a concomitant result of agricultural practices in the study area. This sociopolitical condition may have persisted for a long time, but eventually all the rather small-scale independent reservoir or canal systems were bypassed by a centralized government or higher-order controls, in a process which was termed "linearization" by Flannery (1972:413-417).

The frequency of historical accounts concerning irrigation works compared to those of warfare is marginal. There are 16 accounts of irrigation works for both the Silla and Baekje Kingdoms in both the *Samguk sagi* and *Samguk yusa*, while there are 196 accounts of warfare for the Silla Kingdom alone. If we take into consideration the construction of defensive fortifications in relation to warfare, the importance of warfare in the historical document becomes even more significant. This strongly suggests that irrigation works may have not been as important as other sociopolitical events for the rulers of the Silla Kingdom. Furthermore, it implies that irrigation works were not a critical factor for state formation in the Silla Kingdom and in protohistoric Korea generally.

Stele

Interestingly enough, two stelae, which primarily describe the construction and maintenance of the irrigation works conducted in the Silla Kingdom, were discovered in the study area. That is, the Silla Kingdom erected these monumental stelae, on which were inscribed a detailed history of the entire project of both construction and maintenance of reservoirs located in Silla territory. One stele, called, the Oh-jak Stele, was discovered in the current city of Daegu (70 km to west from Gyungju) in the late 1950s. The

other stele, called Jung Je [Reservoir] Stele, was discovered in the current county of Youngchun, located 45 km northwest of Gyungju. Since detailed information on the Oh-jak stele is not presently available, I will focus on the Jung Je Stele.

The Jung Je Stele has two sides, on which two different histories of the Jung Reservoir are inscribed. The inscription on one side is older and is concerned with the initial building of the reservoir. The younger inscription on the other side is concerned with the reconstruction and maintenance of the reservoir. The contents of the earlier inscription of the Jung Je [Reservoir] Stele do not provide an absolute date except for mentioning the sexagenary cycle of Byungjin, while the later inscription provides an absolute date of 798 A.D. On the basis of chronicles available concerning irrigation works that appeared in the *Samguk sagi*, especially No. 10 (in Table 2), Lee, K. B. (1984:303-304) proposed two possible chronologies for the earlier side of the stele: 536 or 596 A.D., respectively. It is also possible that the chronology of this side of the stele could have been 60 years or 120 years earlier (476 or 416 A.D.) than Lee, K. B. (1984) estimated (Kim, C. H. 1983:118). In any case, the precise chronology is not very critical for this study, because the Silla Kingdom had already reached state level society by that time.

According to the inscription on the earlier side of the Jung stele, 7000 laborers were drafted (from unknown villages) for the construction of the reservoir. A total of eight government officials (seven from the central government and one from local government of the Silla Kingdom) directed and supervised the entire reservoir construction project, which began February 8 and was completed sometime in April in one of the following

years: 416, 476, 536, or 596 A.D. Thus, it apparently took less than three months to finish the reservoir construction. This rather short time frame seems to coincide with the farmer's slack time. That is, the seasonality of the civil work was probably designed to avoid the busy farming season, which made it easier for the government to draft *corvées* from local villages.

The other later side of the Jung stele provides some redundant information concerning the history of the initial reservoir period as well as information about reconstruction and maintenance of the same reservoir some centuries later. According to the inscription of the stele, the government had begun to reconstruct the reservoir on February 12th and finished it on April 13th, 798 A.D., during the agricultural slack season. The Silla Kingdom authority dispatched two central government officials and nominated one local government official to direct the work. A total of 136 stonemasons and 14,140 laborers were drafted from the entire Silla Kingdom. Additionally, an unidentified number of assistants (the exact number is unknown because a small portion of the stele is damaged, but no more than 10 judging from one Chinese character length of the blank spot) were drafted from two nearby counties.

The stele inscription also provides the scale (e.g., length, width, and depth) of the reservoir. The scale is difficult to determine precisely, since it is hard to translate from the measuring system of the ancient Koreans. Yet, there is no question that the irrigation work must have been huge, according to the total number of laborers drafted for the maintenance project (slightly more than 850,000 men-days). Interestingly enough, the same reservoir was reconstructed once again 890 years later during the Yi Dynasty, according to

another stele erected after reconstruction work in 1688 A.D. (Lee, K. B. 1984:284). This time, a total of 14,800 *corvée* laborers were drafted. Thus the information from the stele strongly indicates that only centralized authority had access to the labor and capital necessary for construction and maintenance of irrigation works in both the Silla Kingdom and the later Yi Dynasty.

Although the *San quo chi* gives a brief picture of the agricultural practices of the Three Han, it does not say anything about the irrigation works. As mentioned earlier, since wet-rice farming had been practiced by prehistoric Korean people from as early as the eighth century B.C., there is a possibility that people must have long been involved in the irrigation works to increase their agricultural productivity. Nelson (1992) argues as follows:

The earliest mention of the construction of reservoirs to increase the water supply and enhance production occurred at a far later period, in reference to the Sam Han [Three Han] of the protohistoric period. we may thus conclude that agriculture was not a moving force for sociopolitical evolution in prehistoric Korea. Rather, agriculture and leadership were in this case independent variables, and the causes for social stratification must be sought elsewhere [Nelson 1992:182].

I agree with Nelson. The construction of irrigation works without any centralized government involvement was indirectly suggested by the *Samguk sagi* (see Table 2, No. 4), though exactly when the works were constructed is largely unknown. The *Samguk sagi* provides a total of 12 cases of irrigation works for both Baekje Kingdom (N=4) and Silla Kingdom (N=8). There is one small interpretative problem related to the reliability of the irrigation work chronicles recorded in the *Samguk sagi*. If we accept the *Samguk sagi*, then the large-scale irrigation works were constructed

considerably later and only after the emergence of a state level society. On the basis of the irrigation works shown in Table 2, we can argue that only centralized authority had access to the labor and capital necessary for the construction and maintenance of large-scale waterworks. If we take into consideration the two different contexts of the Jung Reservoir, the context of the involvement of centralized authority in the reservoir construction becomes much more clear. In conclusion, we have to look for other more convincing mechanisms responsible for the emergence of the Silla Kingdom.

Archaeological Research

Only two archaeological excavations on Korean irrigation works have been conducted, one formal and one informal. The archaeological data recovered from the two sites is very sketchy because of small sample size and poor research design in terms of executing overall archaeological data recovery and analysis. Yet, since no archaeological investigation has been conducted on irrigation works in the study area, the two provide the only current archaeological information about irrigation works. On the basis of these two rather limited excavations, I will discuss irrigation works in the study area. In addition, I will incorporate some information collected while I was conducting a survey for irrigation works in and around the study area. I visited the two excavated irrigation sites and three other historically well known reservoir/canal localities during the summer of 1993. From the observation, I made a table and a map of Korean irrigation systems (Table 3 and Figure 10).

The Susan Je [Reservoir] (see No. 1 in Table 3), which has been destroyed by agricultural practices, is located in Hanam city, Milyang County, roughly 70 km southeast of Gyungju (the capital of the Silla Kingdom) in South Gyungsang Province (Figure 10). Since neither the *Samguk sagi* and *Samguk yusa* nor the *San quo chi* mention anything concerning the reservoir, and no stele exists, the early historical background of the reservoir is almost unknown. But it is generally presumed that the reservoir was constructed during the Sam Han Period (ca. 0-300 A.D.). This is based upon historical accounts concerning wet-rice agricultural practices that appeared in the *San quo chi* (Lee and Lee 1984:96; Yi 1959:306). In addition, later historical documents compiled during the Korea and Yi Dynasties describe the history of the reconstruction of the reservoir for the later time period. That is, the reservoir was reconstructed once in 1274 during the Korea Dynasty and three times more between 1463 and 1485 during the Yi Dynasty. The reservoir was used by local farmers until 1928 when it was destroyed, and a different irrigation system used, which also was later ruined. Therefore, it is certain that the Susan Je did indeed exist and must have been used by many local peasants for a long time.

When I visited the site of the reservoir during the summer of 1993, there were nothing but rice paddies. The historically known archaeological site of the reservoir had been partially excavated over a period of three days by a local amateur archaeologist in 1986. He excavated a small portion of the site and confirmed the existence of a watercourse and a water gate (Length 20 m, height 1.81 m, and width 1.1-1.51 m), which are considered to be part of the reservoir (Shon 1990:80-81). Since the excavator was an amateur prehistorian

Table 3. A List of Historically Known Large-Scale Irrigation Systems in Korea.

No.	Name	Type	Geographic Location	Presence/ Absence	Date (A.D.)	Size/ Length
1	Susan Je	Reservoir	Milyang, South Gyungsang Province	A	0-300	unknown
2	Byukgol Ji	Canal	Gimje, North Jeolla Province	P	330	3000 m
3	Euirim Ji	Reservoir	Jechun, North Choong Chung Province	P	0-300	2000 m (Circum.)
4	Gonggum Ji	Reservoir	Sangju, North Gyungsang Province	A	0-300	1548 m (Circum.)
5	Daejae Ji	Reservoir	Euisung, North Gyungsang Province	A	0-300	unknown

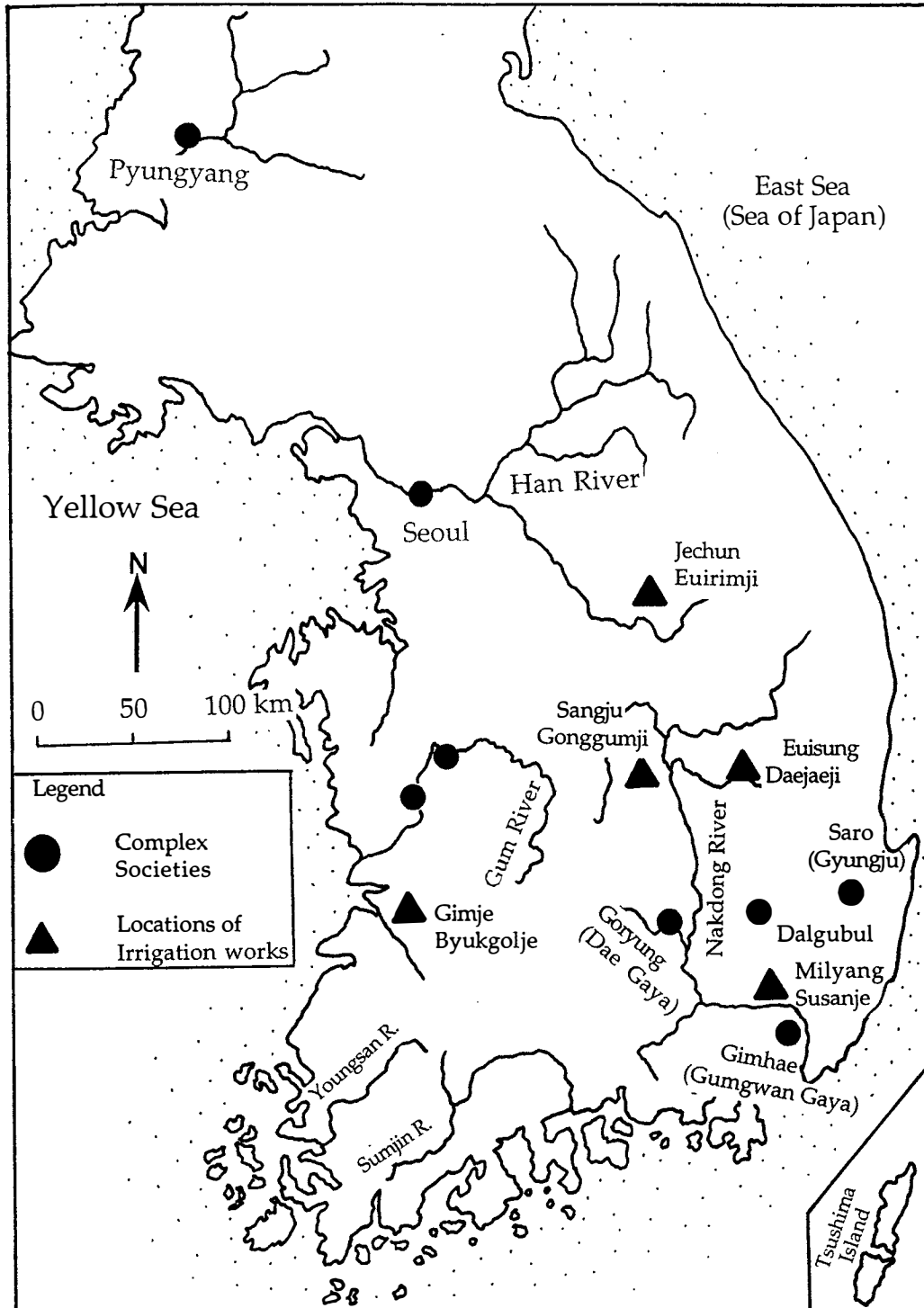


Figure 10. Geographic locations of historical reservoirs, canals, and complex societies in protohistoric Korea.

unfamiliar with appropriate excavation techniques, little specific information in terms of chronology or other archaeological aspects of the reservoir were collected.

The other historically known canal, Byukgol Je [Canal] (No. 2 in Table 3) is located in Booryang Town, Gimje County, in North Jeolla Province (see Figure 10). This canal still exists and is being heavily used by a great number of local farmers. The major water source for this canal is the Dongjin River which flows from southwest of the canal to northwest and eventually meets with the Yellow Sea. This is a very long (ca. 3 km) and narrow (width 21.8 m) canal which flows in a south to north direction almost straight through the middle of the Honam Plains. Several small water gates, through which farmers irrigate water to their paddy fields, have been installed every 500 ± 100 m. The presence of this canal is critical indeed for the wet-rice agriculturists in the Honam Plains.

An archaeological excavation near one of the major water gates located at the northern end of the canal was formally conducted by Chungnam University Museum in 1975 (Youn 1976). It confirmed the presence of six huge standing stone posts assumed to be structures for watergate-two at the mouth of the canal, two in the middle of the canal, and two at the end of the canal. One stone post measured was 5.5 m in height, 0.75 m in width, and 0.5-0.6 m in thickness. The mean distance between the two standing stones was 4.2 m (presumably the width of a watergate). On the basis of their investigation, the researchers established an approximate scale for the dike of the canal: 3000 m in length, 4.3 m high, 17.5 m wide at bottom, and 7.5 m wide at top. An estimated total volume of dirt transported to construct the canal

was 161,253 m³, and researchers assessed that it required 322,500 man-days work to build the canal. Thus, on the basis of the huge amount labor expended on the canal construction, it was concluded that this large irrigation-work should be considered a *result* of the presence of a centralized state that had political power strong enough to draft a tremendous amount of labor (Youn 1976:77).

The excavation recorded only one potsherd and a few other irrelevant artifacts of later time periods. Three C-14 samples were collected and sent to the Korean Atomic Energy Research Institute (KAERI) for radiocarbon determinations (Table 4). The dates should be accepted with caution since the C-14 samples were collected from a carbonized plant layer at the bottom of an artificial earthen wall. The excavators assumed that there had been a great deal of wetland vegetation, such as reeds, around the area before the construction of the canal. Therefore, the collected C-14 samples were considered to be a pressed and carbonized layer of vegetation on the bottom of the canal (Youn 1976:76). This does not seem to be an ideal situation for taking C-14 samples. Generally, dating canal systems is considered very difficult, because they usually do not yield appropriate material necessary to obtain chronometric or relative dating (Eighmy and Howard 1991:89). For instance, there is not much material remains available around canals, and that was true in this case. Since the chronometric dating was obtained from an inadequately understood C-14 sample, the chronology can hardly be adopted without caution.

Table 4. Carbon-14 Dates Associated with the Byukgol Canal.

No.	C-14 sample	Radiocarbon Date (B.P.)	Date (A.D.)	Material
1	KAERI-149-1	1600±100	350	carbonized plant layer
2	KAERI-149-2	1576±100	374	carbonized plant layer
3	KAERI-149-3	1620±100	330	carbonized plant layer

Note: Sources from (Youn 1976:77).

The excavators did note that the radiocarbon dates obtained correspond approximately to the date that appeared in the Annals of the Silla Kingdom of the *Samguk sagi* (King Heulae, 21th year, 330 A.D., see Table 2). On the basis of this chronological agreement between historical documents and archaeological data, and taking into account other archaeological circumstances such as the appearance of a high-mounded tomb from the fourth century A.D., they argue that the large-scale irrigation work was a result of the presence of centralized authority, not the reverse. If this canal had been constructed in the fourth century, as is postulated by the excavators and other historians, then large-scale irrigation systems were a result of the presence of a centralized government rather than a cause, at least in the Baekje area, especially since it is generally accepted that the Baekje Kingdom emerged in 260-261 A.D.).

In general, the Honam plains have been among the most fertile areas in Korea, having have produced a great amount of rice (cf. Suh et al. 1989:16),

although there must have been fluctuations from 0 -200 A.D. to the present in terms of this productivity. If this assumption is correct, a tremendous amount of water may have been necessary to sustain the rice paddies in the Honam Plains. Thus, the primitive or incipient form of the canal may have appeared much earlier than the chronology obtained by the radiocarbon dating indicates. If this is true, the canal was probably originally constructed and managed by independent local communities and eventually taken over by a centralized government.

There are three more historically known large-scale reservoirs which I examined during the summer of 1993 (see Nos. 3, 4, and 5 in Table 3 and Figure 10). It is widely accepted that these other three reservoirs were also constructed during the Three Han period (Lee and Lee 1984:96; Yi 1959).

Among them, Eurim Ji (see No. 3 in the Table 3) still exists and is currently being used by local farmers, while the other two reservoirs (see Nos. 4 and 5 in Table 3) were destroyed long ago, as they were turned into or utilized as wet-rice paddies. When I interviewed local amateur historians and residents living near the reservoir sites, they told me many different versions of the legendary stories concerning the two reservoirs. Some of the stories were compiled by the Sangju County Record Compilation Committee (1987) and Euisung County History Compilation Committee (1986), respectively. In addition, each local government recognized the importance of the sites and erected memorial stelae at each site.

It is important to note that none of the reservoirs can be correlated with the early complex societies (i.e., the Silla Kingdom and Baekje Kingdom) in terms of their approximate geographic location. Thus, if large-irrigation

works had played a critical role for the formation of the emergence of state-level societies, then one might suppose that the center of the Kingdom or any complex society should have been located close to the irrigation systems. If all the historically known reservoirs had originally been managed and administered in the milieu of egalitarian society, and if the construction project processes stimulated the emergence of complex society(ies), complex societies should have appeared at least in the vicinity of the reservoirs or canals discussed. As can be seen in Figure 10, however, there are large distances between the reservoirs and the centers of the Baekje and Silla Kingdoms. This again suggests that irrigation works had little impact on the formation of the state in prehistoric Korea.

As was seen above, the study of ancient irrigation systems in Korea has not yet been conducted appropriately. The current evidence for irrigation works is minimal in both terms of the historical record and inscriptions on stelae and the known archaeological record. Therefore, it is premature to draw conclusions on the basis of the fragmentary historical documents and archaeological data available. To fully investigate the relationship between the role of irrigation works and state formation in Korea, further research and clarification is needed. Alternatively, judging from the large scale of the two extant irrigation works (Byukgol Je and Euirim Ji), it is not impossible to infer that prehistoric people did not construct those civilworks without the involvement of a well established centralized government that could draft a great number of laborers. This case indicates that the construction of large scale irrigation systems were not a cause but a result of state-level society in ancient Korea.

Long-Distance Exchange

Intraregional and interregional exchange also have received considerable scholarly attention as potential causative factors in the emergence of state-level societies. Archaeologists who emphasize long-distance exchange in state formation argue that in certain areas a lack of basic resources such as igneous rock for grinding stones, obsidian for cutting tools, and salt, in the lowlands of Mesoamerica (Rathje 1971, 1972) or metal, timber, and stone for building and tools in southern Mesopotamia (Wright 1972a; Wright and Johnson 1975), stimulated people in various regions to interact in order to acquire raw materials. As a result of long-distance exchange, populations increased, as well as the demand for basic resources, which ultimately allowed emerging rulers to administer efficiently the intercommunity economic interactions. Thus, long-distance exchange theorists argue, a series of interrelated variables accompanied large-scale, long-distance exchange, such as more efficient organization for logistics of transportation, extension of trade networks, development of military organizations to defend traders from enemies, and redistribution of either raw material or prestige goods, and all essentially played critical roles in the formation of the state (Johnson 1973; Rathje 1971, 1972; Sanders 1968; Wright 1978; Wright and Johnson 1975).

Many scholars argue that rulers use their profits from exchange to support standing armies that can then be used to further monopolize or control trade, carry out warfare with geographic neighbors, and exploit *corvées* and economic surplus from politically subjugated subordinate

polities (Friedman and Rowlands 1978; Haselgrove 1982:79-88; 1987:106-107; Kipp and Shortman 1989; Rathje 1972). Like the irrigation theory, the trade hypothesis also has been subjected to criticism of its validity: it is not certain whether large-scale long-distance exchange was a cause of the emergence of efficient bureaucracy or an effect of an administrative elite that already existed (Haas 1982:140-146; Redman 1978:225-226).

In the case of the southern Korea, tantalizing evidence of long-distance trade is manifested in both the historical texts and archaeological records. In the text, by using historical documents and archaeological data available, the role of long-distance exchange in the development of the Silla Kingdom will be examined.

Historical Document

The *San quo chi*

Although no direct chronicles of long-distance exchange concerning Jin Han, where the Silla Kingdom later arose, appears in the *San quo chi*, a few historical accounts concerning economic activities carried out by Byun Han, and one relating to the Sam Han are available. Thus, by using the chronicles that appear in the Byun Han section and general statements regarding economic behaviors of the Sam Han from the *San quo chi*, the relationship between long-distance exchange and its impact on the sociopolitical evolution will be discussed. The long-distance exchange that took place between Byun Han, located between Ma Han (west) and Jin Han (east) in southern Korea, and neighboring polities and countries is described in the *San quo chi* as follows:

Byun Jin [Buyn Han] produces iron. Han [Jin Han, Ma Han], Ye [Dong Ye], Wa [ancient Japan] people all come and buy it. In their markets, people use iron [ingots/plates] for buying and selling [merchandise], like money is used in China. Byun Han supply iron the two Guns [Naklang and Daebang] [Chen shou 1987:196; translation by the author].

This record apparently shows that Byun Han produced a great deal of iron and exported and supplied the iron to neighboring countries. As will be shown below (Chapter VIII), a great number of iron ingots/plates considered to be the principal export item of raw iron, have been discovered in many high-mound burials in the Byun Han and Jin Han regions in south Korea. This suggests that the historical document of the *San quo chi* is quite reliable on this account. Although this chronicle does not indicate what material the Byun Han people acquired from their counterparts in return, there is no doubt that the Byun Han people were engaged in long-distance exchange with neighboring polities (Jin Han) and foreign countries (e.g., Naklang, Daebang, Dong Ye, and Wa of ancient Japan). Yet, this is still not sufficient evidence to explain the relationship between the role of trade and the sociopolitical organization of the Byun Han and Sam Han.

Economic activities carried out by another polity located on current Jeju Island are described in the *San quo chi* as follows:

Also there is a big island called Hoju [considered Jeju Island] in western sea of Ma Han. In general, people are very short and their language is different from that of Han [Ma Han]. All people have their hair cut like Sun Pei [a nomadic tribe in Manchuria]. Their clothes are made of leather and they are fond of domesticating cows and pigs. They wear a jacket but they do not wear pants, they, thus, look naked. They travel around by boat buying and selling merchandise with the Sam Han and Jung [China] [Chen shou 1987:195; translation by the author].

Hoju Island, the current Province of Jeju (1809 km² in size) the largest island in Korea. It is located approximately 140 kmsouth of Mokpo (see Figure 1). Its political affiliation during the Sam Han period is not clearly known, but it must have been one of the small independent polities. The polity on Hoju Island, called 'Tamra *guk*' during the Three Kingdoms period, voluntarily surrendered to the Silla Kingdom in 662 A.D. (see Chapter VII). The important issue here is that, although the Hoju Island polity was dynamically engaged in long-distance exchange with neighboring polities, and even with Han China, it remained no more complex than a chiefdom until it became part of the Silla Kingdom.

The long-distance exchange practiced between the Hoju Island polity and the Former and Latter Han dynasties of China was archaeologically confirmed by the discovery on the island of Chinese bronze mirrors and dagger ornaments, at least four different kinds and many coins of Han Chinese and Sin Chinese [Intermediate Chinese dynasty, i.e., between during Former and Latter Han, 8-23 A.D.] (Lee and Kang 1994:581-589). Those artifacts were manufactured in China and dated from about the first century B.C. to the last part of the first century A.D. It should be noted also that Jin Han as well as the other two Hans were involved in long-distance exchange with the Hoju polity sometime between 100 B.C. and 300 A.D.

There is another relevant historical account concerning economic interaction that took place between local indigenous populations and Naklang, the Han Commandery located in northwestern Korea. According to the *San quo chi*:

According to the customs of local inhabitants, the Three Han people(s) enjoy wearing formal clothes and hats [of Han Chinese authorities']. When commoners [of the Three Han] come and visit [Naklang or Daebang], they all borrow formal clothes and hats [from colleagues and wear them]. There are more than one thousand people who carry their own seals with ribbon and wear formal clothes and hats [Chen shou 1987:194; translation by the author].

This historical account shows that local indigenous people were very anxious to obtain Naklang Commandery government officials' formal clothes and hats, which must have been regarded as exotic items. With this indirect information, it is difficult to assess either the scale or significance of long-distance exchange between them. This historical record apparently suggests that there were a great many interactions over long periods of time between the local indigenous populations of the Sam Han and Naklang Commandery.

The "more than one thousand people" who pretended to be very important people by wearing formal Chinese clothes and hats, and carrying seals with ornaments, is indeed a big number for the Sam Han. This strongly suggests that even commoners in the Three Han area were able to visit the prefectures of Naklang and/or Daebang and make economic transactions. The purpose of commoners' visits to the prefectures was apparently to obtain prestige items (e.g., Naklang government officials' formal clothes and hats), but some other economic transactions must have taken place as well. That is, indigenous people may have sold locally available materials (e.g., iron, linen, jade, and lacquer, as recorded in the *San quo chi*). They probably bought exotic prestige items such as bronze artifacts (e.g., mirrors, and a variety of weapons and ornaments), writing brushes, and pottery and wooden vessels.

Such things are often recovered in the burials from the study area. These kinds of artifacts have been discovered in many different areas in southern Korea. Thus it is not unreasonable to assume that there were very dynamic business transactions that took place between the indigenous people and the personnel of the Chinese Commanderies.

If this assumption is correct, it would be possible to make two inferences. First, long-distance exchange was not systematically organized on a centralized polity basis, but may have been carried out on an individual basis. Such rather loosely organized long-distance exchange expeditions and informally established exchange networks may imply the presence of relatively less complex sociopolitical organization, but highly competitive polities in the Sam Han region in general. Second, there was strong competition among local indigenous populations and groups to obtain political hegemonies. This rather intense sociopolitical environment may have eventually made it possible for a few local political leaders to control their territory and, concomitantly, local production (e.g., food stuffs and strategic resources). Thus, in some form, long-distance exchange must have played a role in the transformation from lower to higher sociopolitical organization. But the limited historical evidence does not allow us to make further inferences concerning the relationship between long-distance exchange and state formation in the study area.

It is of interest to note that the populations of the Sam Han area were not interested in obtaining basic resources due to any uneven distribution in resource availability, as was seen in the case of Maya region or southern Mesopotamia, but sought instead luxury goods as status items (i.e., "Useful

products"-practical value versus "Functional products"-state or ritual, *sensu* Tourtelot and Sabloff 1972). This strongly indicates that long-distance exchange in the Sam Han region was more closely associated with obtaining sumptuary goods rather than staple sources. But trade in "Functional products" must have been more significant in the transformation of chiefdoms into states than trade in "Useful products" (Tourtelot and Sabloff 1972), if indeed long-distance exchange played a role in the sociopolitical transition in the Sam Han region.

The *Samguk sagi*

No chronicles directly related to long-distance exchange appear in the Korean historical document *Samguk sagi*. There are, however, two chronicles regarding domestic market economy (Table 5). The contents of the chronicles, especially the first one, do not seem to be realistic in the light of the chronology. The dynamic economic transactions that took place between the Sam Han and foreign countries (e.g., Naklang and Daebang) were already witnessed during the first and the third centuries A.D., according to the above quotation from the *San quo chi*. Therefore, it is not unreasonable to assume that similar frequent economic transactions took place in the pre-Silla area during that time, regardless of whether those transactions were controlled by a centralized authority or were autonomously managed on an individual basis.

Since the Silla Kingdom already had reached a state level society by the end of the fifth century A.D., the above chronicles indicate that a centralized

Table 5. Chronicles Regarding Domestic Economies of the Silla Kingdom as Appearing in the *Samguk sagi*.

No.	Date (A.D.)	Name of King	Contents
1	490	Soji(12th year)	Open markets in the capital [Gumsung] and let people buy and sell goods.
2	509	Jijeung(10th year)	Newly established Dong Si [Eastern Market] in the capital [Gumsung].

government authority legalized the economic transactions taking place around the capital [Gumsung]. Then, approximately 20 years later, government officials designated a market place which enabled them to conveniently collect taxes from merchants.

As can be seen, there are no historical accounts concerning long-distance exchange in the *Samguk sagi*, making it difficult to examine the role of long-distance exchange for the development of a state level society in the study area with this type of historical data. As in the case of irrigation works, not a great deal of attention was given to long-distance exchange in this document, which may indicate that it was not a significant factor for the society. In sum, the long-distance exchange model to explain state formation does not seem to be applicable to the study area from the perspective of historical documents.

Unlike other world regions which faced shortages of basic resources, the polities located in the study area had all kinds of raw materials for daily living. There was no urgent need for basic resources (Useful products) from

other regions, but rather a desire for exotic prestige items (Functional products), which were directly related to status competition. Also there was a strong motivation to obtain a sociopolitical monopoly in theocratic or secular sociopolitical environments during the late Bronze age or the early Iron age in Korea (B.C. 200-200 A.D). This trend continued until as late as the end of the second century A.D.

Archaeological Data

Bronze artifacts commonly discovered from burials (especially stone-cist burials, see Chapter V) of Bronze age Korea include fiddle or slender-shape daggers, mirrors, axes, pommels, bells, decorations for scabbards, and various kinds of functionally unknown artifacts. It is generally accepted that the indigenous prehistoric Korean people began to produce bronze artifacts at least by the eighth century B.C. The local production of bronze artifacts is well confirmed by the discovery of stone molds for the casting of bronze daggers, axes, and mirrors in many parts of the Korean peninsula (Kim, J. B. 1983:121-122; Kim, W. Y. 1986:103-113; Youn 1987:67-70).

But some bronze artifacts are considered to have been imported into Korea from elsewhere. Therefore, it can be assumed that some bronze artifacts discovered in Korea were outcomes of either migrations of people, long-distance exchange, or a combination of both. It is difficult to determine where all the Korean bronze artifacts from the early time period were manufactured, unless we perform chemical analyses of the materials and compare the results with artifacts discovered elsewhere. However, taking into consideration the overall historical context, it is difficult, if not possible,

to presume that there were systematic long-distance exchange transactions between indigenous prehistoric Korean people and neighboring people(s) during the earlier time period (ca. 700-300 B.C.). Even if there were long-distance exchange transactions in Korea, it is not possible to associate them with the emergence of state-level society, since there is a big chronological gap between the Bronze age and state formation in Korea. That is, the Korean Bronze Age dates from the seventh to the third or second centuries B.C., while a state-level society in Korea did not appear until the fourth century A.D. in the study area. Therefore, the presence of long-distance exchange during the Bronze age cannot be factor in explaining the emergence of state-level society in the Korean case. On the other hand, long-distance traded items recovered from the later time period (i.e., after the third century A.D.) will be discussed in Chapter VIII. As will be discussed, the amount of archaeological data discovered even then is not sufficient enough to postulate a significant role for long-distance exchange.

But the archaeological evidence that belongs to the time period between B.C. 200 and 200 A.D. is the major research focus of this chapter. During this period, the most commonly traded items, according to discovered materials, are bronze artifacts such as mirrors, spears, axes, hilts, bells, halberds, buckles, buttons, ornaments and other functionally unknown bronze artifacts. The majority, if not all, of the artifacts are considered to be produced either by Han Chinese, or by northern nomadic people(s), in particular, the Scythians. In the case of bronze mirrors, for instance, it is indisputable that they were manufactured in China because the names of eras or of the Han Chinese Kings are often inscribed on them. In addition, it is not

uncommon to find in Chinese historical documents that Chinese dynasties gave a great number of bronze goods (especially mirrors) as gifts to neighboring countries (e.g., Yamato-ancient Japan) (Aikens and Higuchi 1982:244-250). According to bronze artifacts discovered in the study area and its adjacent area, the following table was made (Table 6).

As can be seen in Table 6, material evidence of long-distance exchange in south Korea does exist, but is not abundant. If we carry out chemical analyses on discovered bronze artifacts in Korea, more long-distance traded items may be added to this list. However, even if we regard all bronze artifacts discovered up until the present in the study area and its adjacent area as long-distance traded items, the number is still not sufficient to postulate that long-distance exchange played a critical role for state formation. Isolated artifacts and sketchy historical documents are not enough to prove the case; other structural items such as trading centers or caravan route would be required.

It is interesting to note that some Chinese coins have been discovered in the archaeological context in Korea. In particular, a greater number and variety of Chinese coins have been discovered in north Korea than in south Korea. This is probably due to the close geographic location of north Korea to China. The number of Chinese coins excavated in south Korea is relatively minimal, but the discovery of those coins strongly indicates at least some that economic interactions occurred between Chinese dynasties and protohistoric indigenous Korean people.

Table 6. A List of Traded Artifacts Discovered in the Study Area and Adjacent Areas.

No.	Site	Artifact Type	Freq.	Date	Imported from
1	Dahori	Bronze mirror	1	B.C. 50-0	China/Naklang
2	Dahori	Bronze buckle	1	B.C. 50-0	China/Naklang
3	Dahori	Bronze bell	1	B.C. 50-0	China/Naklang
4	Dahori	Bronze coin	3	B.C. 50-0	China
5	Dahori	Writing brush	5	B.C. 50-0	China/Naklang
6	Joyangdong	Bronze mirror	4	B.C. 1C - 1C A.D.	China
7	Euheundong	Bronze buckle	2	1C A.D.	Siberia
Total				17	

As a matter of fact, the archaeological sites which have yielded Chinese coins roughly correspond to the general geographic locations of polities. These may be related to the sociopolitical and economic events described in the *San quo chi*. An important role for long-distance exchange in the formation of the state in ancient Korea was emphasized by Choi, M. L. (1985, 1992). He argues that Wiman Josun, located on the northwestern portion of the Korean peninsula, became a state-level society by actively engaging in long-distance exchange with neighboring state level societies (e.g., Yen China) and local independent communities in Manchuria. This assertion is supported by a great deal of bronze Knife-money, manufactured and used by Yen China (B.C. 323-222) people, which has been discovered in north Korea (Choi, M. L. 1985:71-73).

According to available archaeological data available, as time progressed the importation of bronze decreased, while local production became more abundant. For example, many bronze mirrors and ornaments imitated from those of the Han Chinese have been discovered in southern Korea. This indicates that local bronze metallurgy rapidly developed as demand for prestige items increased. Thus, many imported sumptuary goods made of bronze primarily manufactured in Han China began to be replaced by locally produced items. That is, the frequency of occurrence of potentially traded bronze artifacts rapidly decreased at least from the second century A.D. in the study area and its adjacent area as well (see Chapter VIII, for more detailed information). More importantly, a great many iron artifacts (various kinds of weapons and utilitarian tools) began to be locally produced, and iron

replaced bronze in many different categories of artifacts. This technological development in metallurgy indicates a rapid sociopolitical change.

Summary

In this chapter, the competing theories of irrigation works and long-distance exchange as causative factors in the formation of the Silla Kingdom were considered. The investigations are based upon both historical documents and archaeological records.

Some confusion was encountered in interpreting the relevant historical accounts concerning large-scale irrigation works in the study area. When the overall context is considered, however, especially in conjunction with the beginning of wet-rice agricultural practices, it is clear that irrigation works existed long before the appearance of a state level society in southern Korea. In addition, there is a significant chronological gap between the construction of irrigation systems and state formation. Thus, it becomes difficult to argue that irrigation works played a critical role the state formation.

On the other hand, some large irrigation works in the study area seem to have been carried out by the centralized authority the Silla Kingdom. If this is the case, irrigation works must be considered as a result of a state-level society. This scenario is very well supported by a stele discovered at one of the reservoir sites in the Silla Kingdom territory. According to information derived from the discovered stele, it is obvious that large irrigation systems were constructed and reconstructed by a very well-organized centralized government.

Two excavated irrigation sites were also analyzed. Available data proved to be of use in establishing the scale and location of each irrigation system, although information provided by the two excavations is fragmentary and not sufficient in many archaeological aspects. The presence and date of Byukgol Je suggests that large-scale irrigation systems resulted from state formation. It is of particular importance to note that there is a long distance between the centers of the Baekje and the Silla Kingdoms and the historically known large-scale irrigation systems presumably constructed during the Sam Han period in ancient Korea. This strongly suggests that there was no correlation between the large-scale irrigation systems and state formation. Therefore the large irrigation systems should be considered the result of state-level society, not the reverse. Taking all this together, we can conclude that the hydraulic theory is not adequate to explain the emergence of state-level society in the study area.

Evidence of long-distance exchange also appeared in the *San quo chi* and is manifested in the archaeological record as well. Yet, as in the case of the irrigation works, most of the evidence is indirect and fragmentary. Historical documents only provide indirect information concerning long-distance exchange, although some useful information on the sociopolitical environment in terms of the level of complexity or general tendency toward sociopolitical development was extracted. The role of chiefly political leaders in controlling organized long-distance exchange was not strongly indicated in the documents. Instead, according to the historical accounts, much long-distance exchange took place on an individual basis, although there is a strong possibility that there were some local political leaders who operated

long-distance exchange expeditions to achieve their political goals. Thus, I argue that economic transactions should be viewed as an autonomous process conducted for economic maximization and the pursuit of individual profit. In other words, there is no correlation between long-distance exchange and the formation of the state, at least in the pre-Silla case. Archaeological evidence exists, but it is too ambiguous to incorporate into this research.

In sum, the two mechanisms of irrigation works and long-distance exchange do not seem to be applicable to the explanation of state formation in the study area or Korea in general. Therefore, we should attempt to find other mechanism(s) responsible for the formation of the Silla Kingdom.

CHAPTER VII

MECHANISMS OF STATE FORMATION: EVIDENCE OF WARFARE FROM HISTORICAL DOCUMENTS

Introduction

In this chapter textual evidence in support of the role of warfare in the formation of the Silla Kingdom is examined. Two literary sources, the *San quo chi* (Chinese) and the *Samguk sagi* (Korean), are primarily used. Besides, when it is necessary, the *Samguk yusa*, another Korean historical document, will be used as well. The emphasis is on descriptions concerning early local indigenous societies in south Korea (i.e., Sam Han), and the wide variety of the sociopolitical interactions carried out by the Silla Kingdom and adjacent contemporary autonomous polities.

The *San quo chi* contains general descriptions of demography, settlement hierarchy, political relationships between polities, sociopolitical processes, fortifications, weapons, and warfare. Although much of this information is not described in great detail, it helps us to understand the overall atmosphere of local indigenous polities (i.e., Sam Han 78 *guks*) of ancient Korea. The *Samguk sagi* provides a great deal of information concerning political, tributary, alliance, and diplomatic relationships, warfare among polities and kingdoms, intrasocietal conflicts, seasonality of warfare and construction of fortifications, and environmental stress. Thus, by using

these two documents and the *Samguk yusa*, the discussion focuses two sections.

The first section focuses on warfare that occurred in the course of the development of the Silla Kingdom, along with some other relevant sociopolitical aspects. To obtain a better understanding of the specific role of warfare in the explanation of the formation of the Silla Kingdom, all references to warfare that appeared in the Annals of the Silla of the *Samguk sagi* were selected and divided into two different categories: defensive and offensive warfare. By examining these two categories the mode of warfare changing in the Silla Kingdom will be discussed.

The second section focuses on a general examination of the factors conducive to the occurrence of warfare, and specifically how population pressure in relation to circumscribed environments, which is an integral part of Carneiro's warfare model, and environmental stresses are associated with the occurrence of warfare. This will make it possible to evaluate warfare that occurred and its relation to state formation and determine the causes of warfare.

Warfare

The role of warfare relating to the emergence of state level societies has been a concern of scholars long before the Christian era began (cf. Haas 1982). Since then a great number of scholars have continued to examine the relation of war and the origin of the state. Yet, it was Carneiro's (1970) article "A Theory of the Origin of the State" that brought about a remarkable increase in scholarly attention on the subject and stimulated a great amount of

anthropological and archaeological research in terms of modern anthropological perspectives.

Carneiro's (1970, 1988:498) warfare theory is basically concerned with three crucial elements: environmental circumscription, population pressure, and warfare. He argues that state formation is a result of the interplay of the three key elements (Carneiro 1970, 1972, 1988). He goes on to argue that warfare oriented towards the conquest of arable land, stimulated by population pressure in direct association with geographic circumscription, is the only mechanism in the rise of state societies. He does not completely rule out the possibility of voluntaristic cooperation under particular conditions, but he considers it not to be persistent, but to be temporal (Carneiro 1970, 1972). Furthermore, since autonomous political units do not have a tendency to willingly give up their sovereignty, he asserts that immediate physical force (i.e., warfare) in many cases is the primary mechanism involved in the formation of the state (Carneiro 1970, 1972, 1981, 1988, 1990).

Not all scholars agree with Carneiro's proposition, because Carneiro's warfare theory is straightforward in nature and has not yet been sophisticatedly tested with empirical data. Yet, a great number of scholars have contended that warfare was a significant evolutionary mechanism, in particular, for state formation. Many scholars have arrived at a general consensus on the important role of conflict between/among independent polities for the emergence of the states in many different parts of the world (Brumfiel 1983; Cohen 1984; Haas 1982, 1984, 1992; Jochim 1979, 1981; Kirch 1988; Schacht 1988; Spencer 1982; Webb 1975, 1988; Webster 1975, 1976, 1977; Wright 1978). Despite this general acceptance of the role of warfare, however,

the theory is continuously challenged, like the two mechanisms (hydraulic and long-distance exchange theories) discussed in the previous chapter. For instance, some scholars reject warfare as a primary cause of the state formation, because they believe that large military conflicts were a result of complex societies rather than a direct cause.

Some other critical problems encountered are: warfare is considerably older and more widespread than the state; the presence of warfare does not automatically bring about the formation of the state; Carneiro's (1970) definition of circumscription is equivocal and is a relative concept (Schacht 1988); even if there were many environmentally circumscribed environments with large populations, and with evidence of human conflict, there is still the case of the Polynesian islands (Kirch 1984:207-216, 1988), where state level societies never emerged; why did prehistoric people(s) who had controlled their population below the carrying capacity of the limited land supply let it grow so large as to cause conflicts over arable land? (Redman 1978:225); if warfare was initiated by the lack of arable land in direct association with overpopulation, unless winners had killed all losers, the fundamental problem, which was the shortage of arable land (i.e., lack of food), would have still remained unsolved; this scenario of population growth in a circumscribed territory may have worked for the explanation of the emergence of social stratification in a given region, but it does not necessary have to work for the explanation of the lack of food in some other regions.

Thus, although warfare theory has played a significant role for the explanation of the emergence of state level societies, there are still many

questions open to debate. This chapter attempts to find some specific explanations concerning the occurrence of warfare and examines causative factors which led to the warfare that resulted in the evolution of the Silla Kingdom in the Korean peninsula. This will be followed by subsequent archaeological investigations in the next chapter.

Historical References to Warfare in the *San quo chi*

The *San quo chi*, Chinese historical text, includes chronicles concerning military behaviors/campaigns, and dynamic sociopolitical processes that occurred in the less complex sociopolitical stage of the Silla Kingdom. Warfare and the other relevant sociopolitical phenomena that occurred between the pre-Silla Kingdom and other polities are not described in great detail in the text. Yet, the *San quo chi* does provide insight into processes of sociopolitical transformation that were operating in south Korea from about the first century B.C. to the third century A.D. A few of the interpolity interactions were already discussed in the previous chapter (see Chapters IV, V). More immediate military actions carried out by the Jin Han (pre-Silla Kingdom) and Naklang and Daebang Commanderies are as follows:

Bujongsa [a name of the government official position in Naklang] O-rim attempted to divide *Jin Han* [possibly Ma Han, source of the confusion] eight guks [polities] and annexed them, [by arguing that] Naklang had originally ruled Han *guk* [Jin Han]. [At that time,] A translating official [deliberately] misinterpreted [the contents of the conversation in favor of Naklang], which made Sinji [local chief of Jin Han] and Han [Jin Han] people [government officials] angry and [they] *attacked* Giryong of Daebang Gun. In the meantime, Taesu [the ruler of Daebang Gun] Gung June and Naklang Taesu [the ruler of Naklang Gun] Yumu organized military forces to retaliate against [Jin Han].

Although June [Gung June, the ruler of Daebang Gun] was killed at the battle, the two Guns [Naklang and Daebang] finally destroyed Han [Jin Han] [Chen shou 1987:194; translation by the author; emphasis added].

Originally this chronicle appears in Han section (Sam Han mixed with the Ma Han section) followed by the two separate sections of Jin Han and Byun Han in the *San quo chi*. Since the Ma Han section does not independently exist, the general Han Section should be considered as that of Ma Han. A critical problem, however, is that the name of Jin Han instead of Ma Han frequently appears in the section, as can be seen in the above quotation. This has caused a lot of interpretive confusion and ambiguity for the study of the Sam Han. Conventionally many Korean historians have taken a straightforward interpretation of the political names that appear in the *San quo chi*. Although I believe that there is a problem with the conventional designation of the Jin Han as it appears in the above quotation, I will adopt the conventional interpretation, since a detailed study of this is not the present concern of this dissertation .

The exact chronology for the political conflict between Jin Han and the Naklang and Daebang Commanderies is unknown. Judging from the contents of the *San quo chi*, however, this may have taken place after the reign of the Emperor Myung (221-237 A.D.) during the Wei Dynasty in China. This chronicle may have exaggerated the outcome of the battle in favor of the Chinese commanderies. Yet, this chronicle strongly indicates the maturity of the sociopolitical and military organization in both the local indigenous polities of Jin Han or Sam Han in southern Korea. Although Jin Han was eventually defeated, it was strong enough to fight effectively against the allied

military forces of the Naklang and Daebang commanderies and to kill the ruler of the Daebang commanderies.

The original Jin Han section that appears in the *San quo chi* is relatively short compared to those for the other two Hans (i.e., Ma Han and Byun Han). Yet, it provides a few interesting historical accounts concerning sociopolitical change that appeared in Jin Han as follows:

Old people [of Jin Han] said from generation to generation "[We] came to Han *guk* [Jin Han] to avoid heavy *corvées* of *Qin* [China]. [When] We came to Han *guk* [Jin Han], Ma Han divided the eastern portion of its territory [which is Jin Han] and gave it to us." There were *fortifications* [in Jin Han]. Their [Jin Han's] language was not the same as Ma Han's.... Originally there were *six guks* [polities], [it] *gradually split and became 12 guks* [polities] [Chen shou 1987:195; translation by the author; emphasis added].

According to this chronicle, a number of the *Qin* Chinese (221-207 B.C.) people migrated into Jin Han to avoid excessive forced labor. There is abundant archaeological evidence (e.g., dolmens) to indicate there was already a large local indigenous population in the Jin Han area where the Silla Kingdom eventually evolved, prior to the time *Qin* Chinese people migrated into the Jin Han area (see Chapter V). It is not clearly known how the *Qin* Chinese people settled down in the Jin Han area of the southeastern portion of the Korean peninsula. Since *Qin* China reached state level society in the third century B.C., the new immigrant *Qin* Chinese people must have been well aware of centralized government systems and hierarchical sociopolitical organization. Consequently the *Qin* people may have been a conducive element in the acceleration of the sociopolitical development in the local indigenous polities in the Jin Han area and southern Korea in general.

The presence of fortifications is recorded in the above historical account. The occurrence of fortifications implies defensive military postures and strongly suggests that there were frequent military battles taking place surrounding fortifications in the area. Since the same literary source, the *San quo chi*, mentions sociopolitical conflicts between the Chinese commanderies and local indigenous polities over arable land or resources (e.g., lumber), as was previously discussed in the Chapter VI, it is not unreasonable to assume that there were considerable amount of conflicts during the Sam Han period.

In particular, the last sentence in the above quotation is of importance for the explanation of sociopolitical developments in the Jin Han area. The chronicle obviously indicates that some autonomous polities in the Jin Han area had undergone the process of fusion and fission, considered to be one of the diagnostic phenomena of sociopolitical evolutionary processes in the formation of the state (Claessen and Skalník 1978b:632; Cohen 1978a:4, 1978b:32, 35). However, it is difficult, if not impossible, to determine on the basis of the fragmentary documentary sources alone what factors caused the processes of fission and fusion in the Jin Han area.

Additional information concerning the Jin Han appears in the Byun Han section of the *San quo chi*:

[Byun Han people] Knew how to ride cows and horses.... [Byun Han people] Are very good at infantry battles and [their] weapons are the same as Ma Han's....Byun Jin [Byun Han people] were living intermingled with *Jin Han* people and [they] also have fortifications. Their clothes and houses are the same as *Jin Han*. [Although Byun Han's and Jin Han's] Languages, laws, and customs are similar, the way they perform a ritual ceremony to [their] ghost [gods] was different. [Chen shou 1987:196-197; translation by the author; emphasis added].

On the basis of this historical account, we can assume that there were similarities between Byun Han and Jin Han in terms of many different sociocultural aspects. As shown above, it is not unreasonable to believe that there were similarities among the Three Hans in terms of military matters as well, such as fortifications, weapons, and infantry battles.

It should also be noted that the above quotations indicate the possible presence of mounted warriors in Byun Han. Jin Han people may also have had mounted warriors, because the polities lived in a very close geographic proximity. On the contrary, the *San quo chi* states, "Ma Han people do not know how to ride horses and cows, they use all the animals for the funerals" [Chen shou 1987:194]. This implies that there were few, if any, mounted warriors in the Ma Han compared to Byun Han and possibly Jin Han as well.

There are a few more chronicles associated with military campaigns. For instance, a political incident took place between Naklang and Jin Han in conjunction with the Yeom sa chi's surrender to Naklang, which was already discussed in Chapter VI. According to this historical account, there was not a real warfare between the two polities, but it did indicate that Jin Han already possessed strong standing military forces, which enabled them to protect their economic resources (i.e., logging) in its territory.

Taking all this evidence together, it appears that intercommunity conflict over arable land and local resources had frequently occurred in the course of the development of Jin Han sometime before the middle of the third century A.D.

Historical References to Warfare in the *Samguk sagi*

There are abundant warfare related chronicles recorded in the Annals of the Three Kingdoms of the *Samguk sagi*. According to the historical text, a great deal of warfare took place between the Silla Kingdom and its counterparts such as the Baekje and Goguryo Kingdoms. Warfare also occurred between Silla and neighboring countries such as Wa, Naklang Commandery, Malgal, and many independent small polities such as Gaya in ancient Korea. The historical source includes other relevant chronicles concerning diverse external sociopolitical interactions such as the establishment of tributary relationship, voluntary submission, and diplomatic relations which took place between the Silla Kingdom and independent polities. The documentary sources also provide information concerning internal sociopolitical dynamics such as rebellions against royal families or the sovereign government. Examination of the historical accounts makes it possible to identify how warfare influenced the formation of the state in the study area.

To investigate the role of warfare and the formation of the Silla Kingdom, all warfare related chronicles that appeared in the *Samguk sagi* were selected and recorded (Appendix A). The determination of war was made on the basis of the definition: "War is a legal condition which equally permits two or more hostile groups to carry on a conflict by armed force" (Wright 1965:698). The term 'conflict' is also used, with the implication of war as a definite and a mutually understood pattern of behavior (Wright 1965:9). For the sake of this research, war is classified into two different

categories: offensive and defensive wars. For instance, when the Silla polity invaded into other polities for either political or economical purposes, it was considered to be "offensive war." On the other hand, when the counterparts of the Silla polity launched a military aggression against Silla, it was determined as "defensive war." As will be discussed below, the Silla polity, to establish economic sanctions and expand its territory in relation to political conquest, carried out significant offensive war campaigns against neighboring independent polities between the first and third centuries A.D., but a great deal of the warfare that occurred in the Silla polity consisted of defensive warfare.

A total of 196 accounts of war were recorded in the Annals of the Silla Kingdom of the *Samguk sagi* from the middle of the first century B.C. to the third quarter of the seventh century A.D. (B.C. 51-676 A.D., for 725 years) for the Silla Kingdom alone (Table 7). If we combine the accounts of war that appeared in the Annals of both the Baekje and Goguryo Kingdoms with those of the Silla Kingdom in the *Samguk sagi*, the number becomes 483 for the same time span. This indicates that a great number of interregional conflicts occurred during the protohistoric period in Korea, and suggests that warfare was a very important factor in the course of sociopolitical development.

There is a significant difference between accounts of warfare compared to those concerning irrigation and long-distance exchange in the Annals of the Silla Kingdom in the *Samguk sagi*. The total number of historical accounts concerning both irrigation and long-distance exchange are minimal (see Chapter VI, Tables 3 and 6), compared to the numbers for warfare. Chronicles of warfare alone consist of 10.1 percent of the entire Annals of the

Table 7. Summary of Participation in Wars with the Silla Kingdom by Other Polities, from the First Century B.C. to the Seventh Century A.D.

Polity	1B.C.	1A.D.	2	3	4	5	6	7	Total
Baekje	0	8	8	12	0	1	4	44	77 (39.3%)
Wa (Ancient Japan)	1	2	1	7	3	16	0	0	30 (15.3%)
Goguryo	0	0	0	1	0	10	2	16	29 (14.8%)
Malgal	0	0	5	1	1	1	0	4	12 (6.1%)
Dang, China	0	0	0	0	0	0	0	11	11 (5.6%)
Gaya	0	3	3	0	0	0	1	0	7 (3.6%)
Naklang	1	3	0	0	0	0	0	0	4 (2.0%)
Eumjibbul <i>guk</i>	0	0	1	0	0	0	0	0	1 (0.5%)
Siljik <i>guk</i>	0	0	1	0	0	0	0	0	1
Biji <i>guk</i>	0	0	1	0	0	0	0	0	1
Dabul <i>guk</i>	0	0	1	0	0	0	0	0	1
Chopal <i>guk</i>	0	0	1	0	0	0	0	0	1
Abdok <i>guk</i>	0	0	1	0	0	0	0	0	1
Gammun <i>guk</i>	0	0	0	1	0	0	0	0	1
Isuhgo <i>guk</i>	0	0	0	1	0	0	0	0	1
Woosan <i>guk</i>	0	0	0	0	0	0	1	0	1
Somun <i>guk</i>	0	0	1	0	0	0	0	0	1
<i>Allied forces</i>									
Hwaryuh/Bulnae	0	1	0	0	0	0	0	0	1
Posangpal [eight] <i>guk</i>	0	0	0	1	0	0	0	0	1
Goguryo/Malgal	0	0	0	0	0	2	0	1	3
Goguryo/Ye	0	0	0	0	0	0	1	0	1
Baekje/Gaya	0	0	0	0	0	0	1	0	1
Baekje/Goguryo	0	0	0	0	0	0	0	1	1
Goguryo/Baekje/Malgal	0	0	0	0	0	0	0	1	1
Baekje/Dang	0	0	0	0	0	0	0	2	2
Baekje/Wa	0	0	0	0	0	0	0	1	1
Malgal/Guhran	0	0	0	0	0	0	0	1	1
Dang/Malgal	0	0	0	0	0	0	0	1	1
Dang/Malgal/Guhran	0	0	0	0	0	0	0	2	2
Total	2	17	24	24	4	30	10	85	196

Note: Two accounts of warfare that occurred in the eighth century were collapsed into the seventh century.

Silla Kingdom of the *Samguk sagi* (politics 48.3%, natural disaster 26.8%, and diplomatic 14.8%) (Shin 1981:76). In the cases of the Goguryo and Baekje Kingdoms, warfare consists of 18.3 percent (politics 36.4%, natural disaster 24.1%, and diplomatic 21.2%) and 20.6 percent (politics 29.8%, natural disaster 31.3%, and diplomatic 18.3%) respectively (Shin 1981:113 -144). This strongly indicates that warfare must have been one of the most critical political events in the course of the development of the Silla kingdom and the other two Kingdoms as well in ancient Korean history.

The Silla Kingdom engaged in war slightly more than once in four years (1.08 time on average, in four years) until the eighth century A.D. Since the Silla Kingdom reached a state level society some time between the fourth and fifth centuries A.D., approximately 95 (48.5%) of the war accounts obviously occurred after the emergence of the Silla Kingdom. Thus, those conflicts occurring after the fifth century A.D. should not be regarded as a cause but instead as a result of the formation the Silla Kingdom. A number of offensive wars managed by the Silla Kingdom during that period were promoted to conquer the Baekje Kingdom (660 A.D.), the Goguryo Kingdom (668 A.D.), and finally to expel the Dang Chinese, which once was Silla's ally, out of the Silla Kingdom's territory. Thus, a total of 101 conflicts between the middle of the first century B.C. and the middle of the fifth century A.D. occurred during the formation of the Silla Kingdom.

Figure 11 shows the overall frequency of occurrences of warfare and how the distribution changed over time. This is based upon the total number of conflicts in Table 7. As can be seen in the figure, the frequency of warfare rapidly increased from the first century B.C. to the first century A.D., then

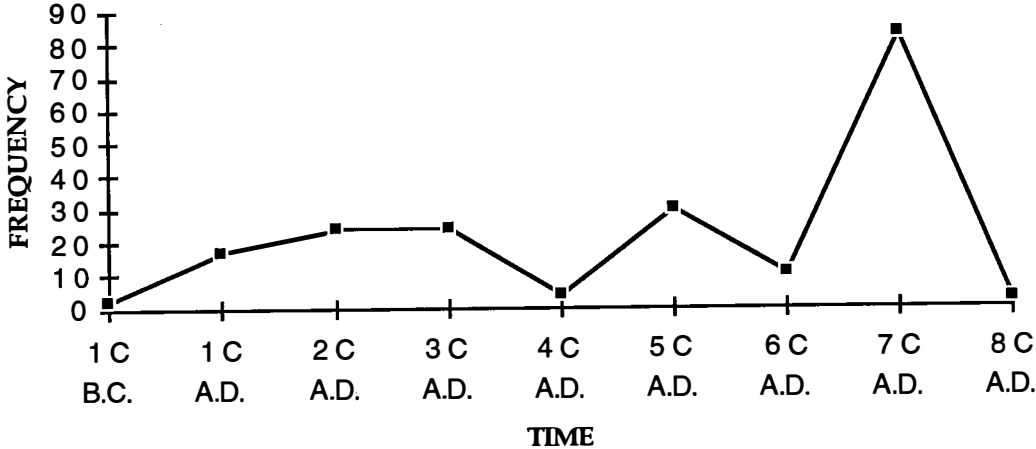


Figure 11. Frequency polygon of total conflicts that occurred in the Silla Kingdom from the first century B.C. until the eighth century A.D.

slightly increased from the first century to the second century, and became stable until the end of the third century. The frequency of warfare abruptly decreased during the fourth century A.D. There were only four times that defensive warfare occurred during the entire fourth century A.D. (three from Wa and one from Malgal, see Appendix A). Warfare increased sharply during the fifth century then abruptly decreased again during the sixth century A.D. An unprecedented number of offensive conflicts occurred during the seventh century A.D. and again dramatically decreased during the eighth century.

The trimodal distribution of warfare that occurred in the development of the Silla Kingdom is significant. Because the pattern that appears in Figure 11 indicates the pace of sociopolitical development of the Silla Kingdom. During the chiefdom stage of the Silla Kingdom (between the first and third centuries A.D.), the tempo of the sociopolitical development appears to have been slow and steady (gradualism). A relatively moderate number of conflicts broke out but little socioevolutionary change occurred (stasis). In contrast, during the fourth century (for a shorter period of time), there were only four conflicts but an increased level of socioevolutionary change is known to have occurred.

The trimodal pattern in relation with the tempo of the development of the state formation strongly implies that both models of punctuated equilibrium or transformationalism and gradualism or continuity are simultaneously appropriate ones for the explanation of the socioevolution of the Silla Kingdom. Similar cases were detected in both in the valleys of Mexico and Oaxaca by Spencer (1990).

Notable historical events that occurred during the second half of the fourth century (King Naemul, 356-402 A.D.) are: (a) the King Naemul adopted the name "Maribgan," which means "ridge" or "elevation," instead of using the traditional term "Isagum," which means "successor prime," used by his predecessors (Lee, K. B. 1984:40). This implies that the king began to have stronger political power and came to effectively control a centralized government; (b) more importantly, he established a hereditary kingship succession system. As a result, the kingship no longer alternated among three royal families (i.e., Pak, Suk, and Kim), but was monopolized by Naemul's Kim family on a unilineal kinship basis. King Naemul established a formal diplomatic relationship with Jeonjin China by sending envoys twice in 377 and 382 A.D. The remarkable sociopolitical development of the Silla Kingdom was recognized by Chinese dynasties and appeared in many Chinese literary sources (Kim, J. B. 1986:58-59; Shin 1984:304-309; Yi 1959:398-402).

The establishment of unilineal kinship hereditary succession indicates that Silla had been transformed into a more strongly centralized polity. As in general chiefdoms are considered to be unstable due to internal feuding and elite competition for limited positions of power (i.e., chief), unilineal kinship hereditary political succession systems can be seen as the foundation upon which a centralized Silla Kingdom was initially constructed (Kang 1993b). The establishment of a legitimate kingship succession is one of the most critical diagnostic traits of a strongly centralized political system (Lewellen 1983:76).

In this context, the 10 accounts of warfare that occurred between the Goguryo and Silla Kingdoms during the fifth century is critical to

understanding the development of the Silla Kingdom. As can be seen in Table 7, there was only one military confrontation between the two Kingdoms until the end of the fourth century (Actually until 450 A.D., see Appendix A). This peaceful relationship existed because Goguryo had become a strong kingdom very early (ca. in the first century A.D.), while Silla had remained a small polity and had established a submissive alliance with the Goguryo Kingdom until the first quarter of the fifth century A.D. For example, the Silla Kingdom sent two princes (Silsung and Bokho) consecutively to Goguryo as hostages. Silsung stayed in Goguryo from 392 to 401 A.D., and Bokho stayed from 412 to 418 A.D. An example of the advantage of the alliance to Silla occurred in A.D. 400, when Goguryo sent 50,000 warriors (both infantrymen and equestrians) to aid Silla's defense against military threats from hostile Baekje, Wa, and Gaya polities.

The relationship between the two kingdoms began to deteriorate from 427 A.D. onward when the Goguryo King Jangsoo moved the Goguryo capital from Guknae Sung [Fortification] in Manchuria to near the current city of Pyongyang in north Korea. By this time, Silla had already been transformed into a strong kingdom (probably state level society) which was no longer submissive to Goguryo. Silla had established a formal alliance with its old enemy the Baekje Kingdom to resist an anticipated Goguryo's offensive military campaign toward the south. Goguryo's invasion into the Silla Kingdom began in the middle of the fifth century (450 A.D., see Appendix A, No. 81). While examining the relationship between the Goguryo and Silla Kingdoms, it should be noted that a series of historical facts, as discussed

above, imply that Silla may have reached a state level society at least sometime before the middle of the fifth century A.D.

Thus, it is widely accepted that the period from 356-402 A.D. witnessed the emergence of the Silla Kingdom as a state level society (Lee, K. B. 1984:40-41; Lee and Lee 1984:149-150; Yi 1959:349-350; *contra* Kim, J. B. 1986:155-68; Shin 1985:31, 89-90 see Chapter VI). This argument shall be further supported by mortuary evidence of the archaeological record in the following chapter.

As shall be discussed below, many of the offensive and defensive conflicts that occurred in the earlier time period (between the first century A.D. and the third century A.D.) set the stage for the explosive development of the Silla Kingdom during the fourth century. However, as can be seen in Figure 11, warfare continued to occur after the formation of the state level society. The fluctuating pattern of overall warfare occurrences from the fifth through the seventh centuries corresponds with the overall developmental history of the Silla Kingdom. That is, Silla appears to have reached a state-level society during the middle of the fourth century and the beginning of the fifth century. After that, there were some critical internal political developments, such as the determination of "Silla" as the new name of the country at the beginning of the sixth century, the formal adoption of "king" instead of indigenous term "Maribgan," reorganizing the local government system (505 A.D.), reestablishment of diplomatic relationships with Chinese dynasties (502, 508), promulgation of codes (520), an official adoption of a new state religion, Buddhism (527-535 A.D.), and territorial integrations (Woosan *guk*, Gungwan and Dae Gayas, and Tamra [Jeju Island, see Figure 2 and 3 for the location] *guk*, between 512 and 562 A.D.). Thus, during this period not

many warfares occurred. During the seventh century, Silla as a strong state-level society began to have carried out critical offensive warfare aiming at the unification of the entire Korean peninsula.

Therefore, warfare that occurred during the seventh century was directly associated with the unification of the Three Kingdoms, indicating that Silla had become a much more mature state after internal sociopolitical development during the static sixth century. Thus, I believe that the evolution of sociopolitical organization of the Silla Kingdom was a gradual and continuous series of processes (gradualism, during the fourth and sixth centuries), but at the same time there were a few sudden leaping stages that developed into more complex sociopolitical organizations (punctuated equilibrium), during the fifth and seventh centuries.

To closely examine the nature of warfare in terms of state formation, all warfare recorded in the Annals of the Silla Kingdom of the *Samguk sagi* is divided into two different categories: offensive and defensive warfare (see above). The dichotomized warfare for the Silla Kingdom is seen in Table 8, and is represented in the polygon graph in Figure 12. As can be seen in the table and figure, a large portion of the warfare that took place in the Silla Kingdom until the end of the seventh century was defensive (66.8%). Furthermore, if elements of warfare that occurred after the sixth century A.D. are removed, (since the Silla Kingdom appears to have reached a state level society at least by the fifth century A.D.), the proportion of offensive warfare diminishes even more rapidly (15.8% offensive versus 80.2 defensive warfare).

Table 8. The Frequency of Warfare for the Silla Kingdom Recorded in the *Samguk sagi*.

Time	Offensive War	Defensive War	Indeterminate	Total
1 C.B.C.	0	2	0	2
1 C.A.D.	2	14	1	17
2 C.A.D.	10	12	2	24
3 C.A.D.	2	21	1	24
4 C.A.D.	0	4	0	4
5 C.A.D.	2 (16, 15.8%)	28 (81, 80.2%)	0 (4, 4%)	30 (101)
6 C.A.D.	6	4	0	10
7 C.A.D.	35	46	4	85
Total	57 (29.1%)	131 (66.8%)	8 (4.1%)	196

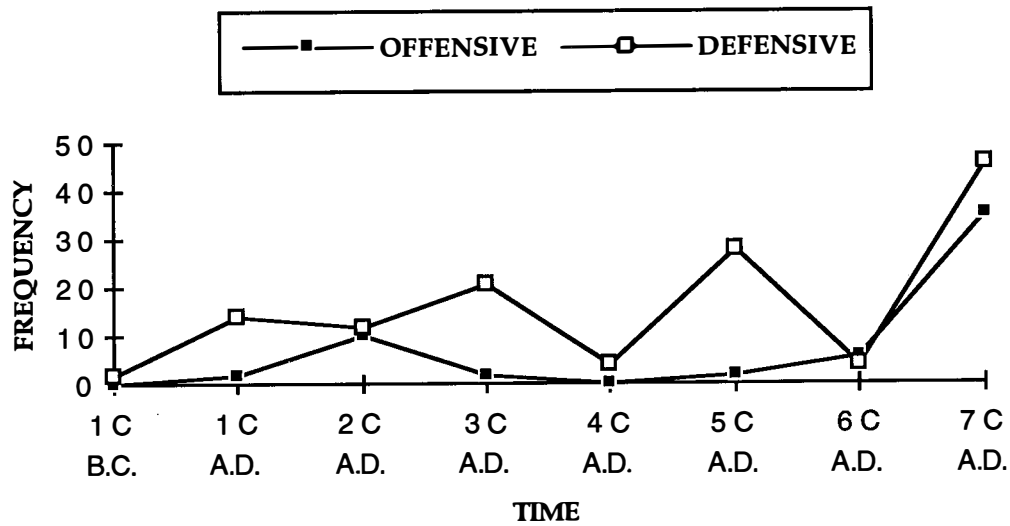


Figure 12. Comparison of the frequency of offensive and defensive warfare based upon historical accounts in the *Samguk sagi*.

As can be seen in Table 7, the Silla Kingdom was repeatedly attacked by the Baekje Kingdom throughout time. The Baekje Kingdom was the strongest contender for control of the Silla Kingdom. Up until the fifth century, there were 29 occurrences (out of 101 conflicts for the Silla Kingdom) of warfare between the two kingdoms recorded in the *Samguk sagi*. The fundamental intent of the Baekje Kingdom's military campaign against the Silla Kingdom was politico- economic such as territorial expansion in conjunction with obtaining strategic resources.

Wa (ancient Japan), located across the South Sea of Korea, was another critical military opponent for the Silla Kingdom. Wa invaded the Silla territory 30 times (out of 101) before the fifth century A.D. The nature of Wa's invasion of the Silla Kingdom was different, however, because the purpose of their invasion was not sociopolitical (e.g., conquering the Silla Kingdom or territorial acquisition) but rather short-term raids for merely obtaining food, or precious items, and taking captives for labor. This pattern is inferred from the seasonality of the Wa invasions into the peninsula. That is, their invasions into the Silla Kingdom were concentrated from April through June, when they needed food most (Lee, J. H. 1980:35; Shin, H. S. 1985:56). Meanwhile, it is interesting to note that Silla never invaded into the territory of Wa.

Aside from these two enemies, the Silla Kingdom was also engaged in military confrontations with the Goguryo Kingdom (11 times until the fifth century, see below for details), Malgal (probably Dong Ye, located in the north of Silla) (Pak 1994:58), Gaya (six times), Naklang (three times), and a few other relatively small neighboring independent polities.

This conspicuously skewed proportion strongly indicates that, in the course of the development of the Silla Kingdom, external pressures from both adjacent polities (e.g., the Baekje Kingdom, Wa, Gaya, and Malgal) and remote polities (the Goguryo Kingdom, Naklang Commandery) contributed to the consolidation of the Silla Kingdom (Figure 13). In other words, continuous warfare and hostility from outside polities stimulated the Silla people to become cohesive by escalating concern for mutual self-interest and defense (Haas 1990:173; Service 1971b:101). Outside pressure would also have reinforced the position of the military leaders (elites) (Renfrew 1986:8), since given vulnerability from continuous hostile outside attack, the mass of commoners would not have had many choices in terms of their movement, leading to what Carneiro (1988:499) termed "social circumscription." It is also possible to assume that continuous warfare may have made it possible to develop a specialized military organization which would have coincided with the emergence of internal differentiation in the central administration of the Silla Kingdom.

At the same time, it is critical to note that the Silla Kingdom was also actively involved in offensive warfare for the sake of its own territorial expansion. In particular, during the second century A.D., the Silla Kingdom invaded many neighboring independent polities, incorporated their land into the Silla Kingdom's territory, and made the conquered people subordinates. Six out of ten offensive war campaigns carried out by the Silla Kingdom during the second century A.D. were directly related to territorial expansion (Figure 14). In addition to overt conquests, some neighboring independent polities, probably intimidated by the Silla Kingdom's strong political power,

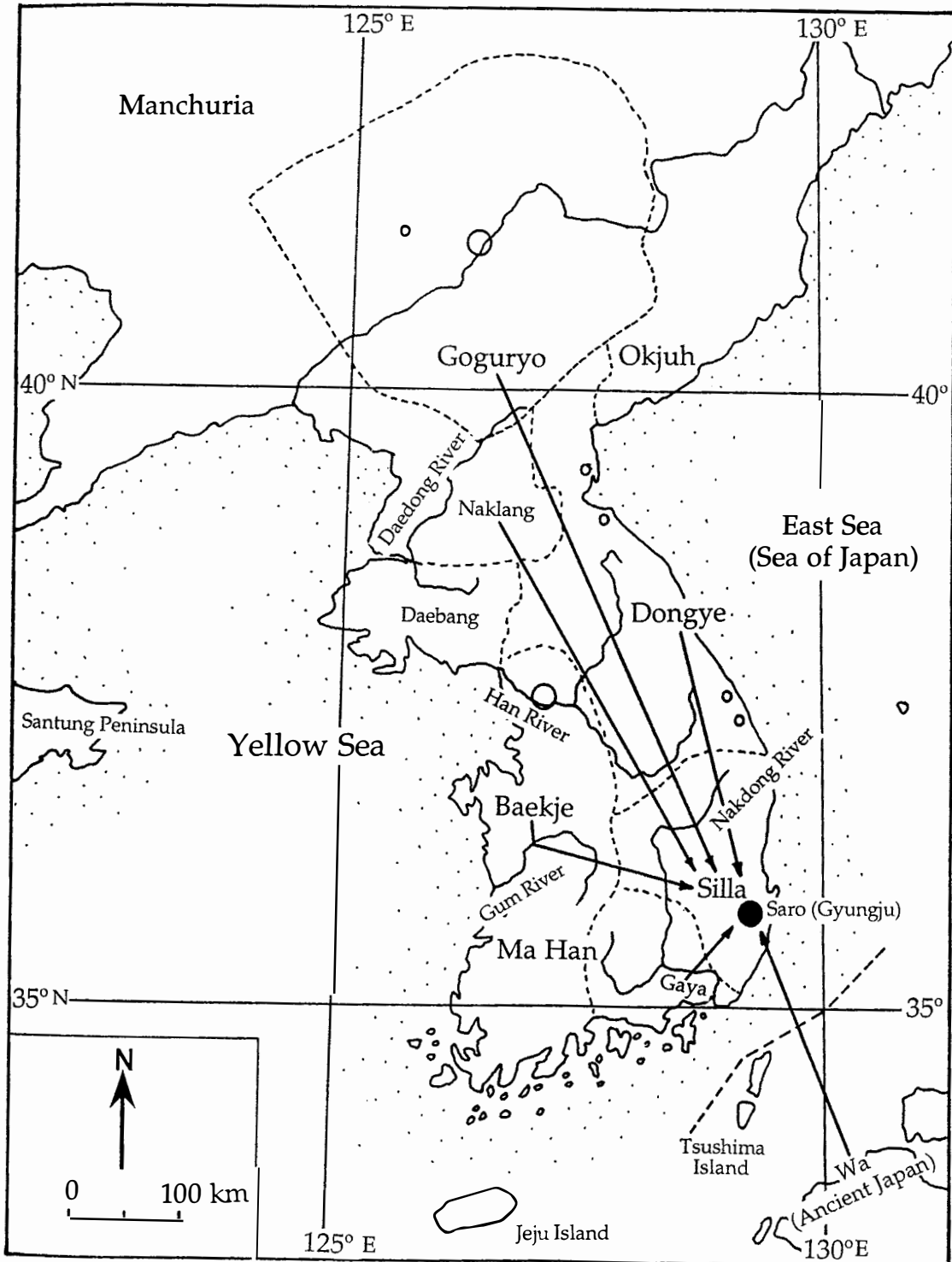


Figure 13. Hostile polities which invaded the Silla Kingdom.

voluntarily surrendered (Table 9). Other adjacent polities made friendly overtures by sending non-locally produced exotic items, unusual local animals, and/or locally produced agricultural products to the Silla Kingdom (Table 10). Thus, although there was no direct physical confrontation between the Silla Kingdom and its counterparts of neighboring polities, the sending of tributes to Silla indicates that those polities adopted a position of subjugation by establishing a subordinate hierarchical social relationship with Silla. The tributary activities carried out by weaker polities apparently helped to acknowledge this power relationship and sought to minimize military confrontation between them and the Silla Kingdom.

On the other hand, the Silla Kingdom, to maintain a positive political relationship with strong kingdoms or polities, also sent off tributes or hostages to the Goguryo and Baekje kingdoms and Wa (Table 11). The tributary activities carried out by the Silla Kingdom may have served to define and formalize social relationships with other stronger kingdoms and neighboring polities, and to confirm alliance or at least to minimize the possibility of hostile military attack from them.

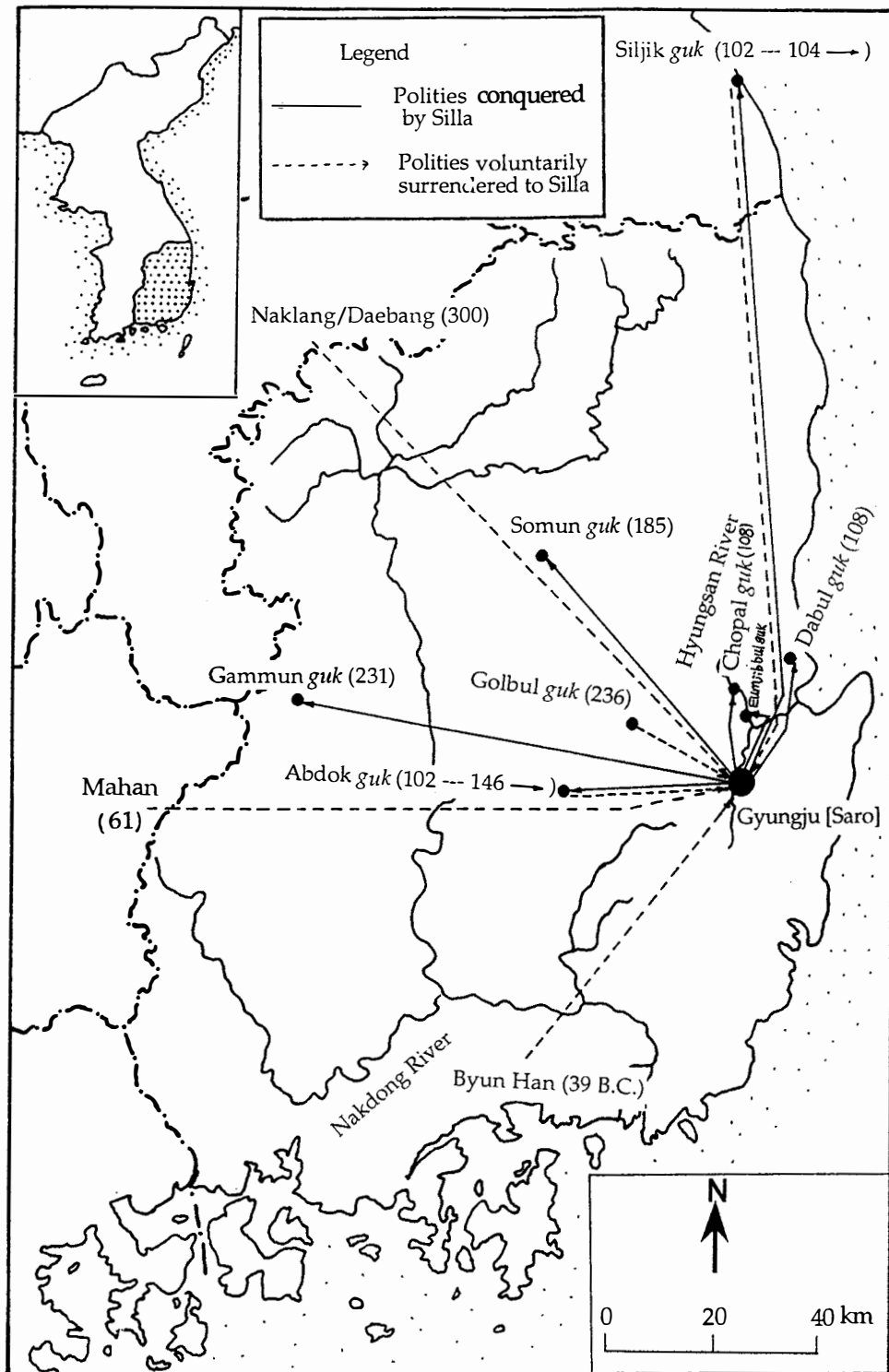


Figure 14. Territorial expansion of Silla by offensive warfare and local independent polities' voluntary submission between the first and the fourth centuries A.D.

Table 9. Polities Voluntarily Surrendered to the Silla Kingdom.

No.	Date	King/year	Contents
1	39 (B.C.)	Hyukguhse/19	Byun Han surrendered with its country [polity]
2	61 (A.D.)	Talhae/5	Mangso, the general of Mahan surrendered with one fortification
3	102	Pasa/23	Siljik King [chief] surrendered
4	102	Pasa/23	Abdok King [chief] surrendered
5	236	Jobun/7	Golbbul <i>guk</i> [polity] King [chief] A-Eumbu surrendered along with many people
6	300	Girim/3	Naklang <i>guk</i> [country] surrendered
7	300	Girim/3	Daebang <i>guk</i> [country] surrendered
8	373	Naemul/18	The lord of Doksan Fortification of Baekje surrendered with 300 people
9	532	Bubheung/19	Gu-hae Kim, the chief of Gungwan <i>guk</i> [one of the largest Gayas], his wife, and his three sons surrendered with the treasures of the country
10	662	Munmu/2	The Lord of Tamra <i>guk</i> [Jeju Island] came and surrendered to the Silla Kingdom
11	666	Munmu/6	Yeonjungto, a minister of Goguryo surrendered with 12 fortifications, 24 governmental officials and 763 families of 3543 people

Note: Since state-level society is assumed to emerge at the end of the fourth century A.D., events below the dotted-line are dated after state formation.

Table 10. Tributary Activities Between Silla and Neighboring Polities
Recorded in the *Samguk sagi*.

No.	Date	King/year/Mo.	Polities sending tributes	Polities receiving tributes	Items
1	5 B.C.	Hyukguhse/53	Oakjuh	Silla	Twenty horses
2	19 A.D.	Namhae/16/2	Buknyung	Silla	The Royal Seal of Ye
3	42 A.D.	Yuri/19	Mak <i>guk</i>	Silla	Hunted birds
4	84 A.D.	Pasa/5/5	Gota [county]	Silla	Blue cow
5	186 A.D.	Bulhue/3/7	Namsin [town]	Silla	Rice
6	242 A.D.	Jobun/13	Gota [county]	Silla	Rice
7	294 A.D.	Yurae/11/7	Dasa [county]	Silla	Rice
8	368 A.D.	Naemul/13	Baekje	Silla	Two horses
9	376 A.D.	Naemul/21/7	Busa [county]	Silla	A deer with an antler
10	434 A.D.	Nulji/18/2	Baekje	Silla	Two horse
11	434 A.D.	Nulji/18/9	Baekje	Silla	One white hawk
12	434 A.D.	Nulji/18/10	Silla	Baekje	Gold, silk
13	441 A.D.	Nulji/25	Samul [town]	Silla	One white pheasant
14	452 A.D.	Nulji/36/7	Dasan [county]	Silla	Rice
15	496 A.D.	Soji/18/2	Gaya	Silla	One white pheasant
16	655 A.D.	Mooyeol/2	Woosoo-ju	Silla	White deer
17	655 A.D.	Mooyeol/2	Gulbul [county]	Silla	White pig
18	662 A.D.	Munmu/2/8	Namchun-ju	Silla	White magpie
19	672 A.D.	Munmu/12/5	Bukwon	Silla	Unusual bird
20	691 A.D.	Sinmun/11/3	Sahwa-ju	Silla	White sparrow
21	697 A.D.	Hyoso/6/7	Wansan-ju	Silla	Rice

Note: Since state-level society is assumed to emerge at the end of the fourth century A.D., events below the dotted-line are dated after state formation.

Table 11. Diplomatic Relations Between Silla and Neighboring Polities
Recorded in the *Samguk sagi*.

No.	Date A.D.	King/year/Mo.	Polities sent envoys	Polities received envoys	Affairs
1	173	A-dalla/20/5	Wa	Silla	Unknown
2	212	Namhae/17	Gaya	Silla	Sent a prince as hostage
3	248	Chumhae/2/2	Goguryo	Silla	Friendly relations
4	261	Chumhae/15/3	Baekje	Silla	Envoys, Silla rejected.
5	300	Girim/3/1	Wa (Silla)	Silla (Wa)	Mutually exchanged envoys
6	312	Heulhae/3	Wa	Silla	Marriage, accepted
7	337	Heulhae/28/2	Silla	Baekje	Envoy, friendly relations
8	344	Heulhae/35	Wa	Silla	Marriage, rejected
9	366	Naemul/11	Baekje	Silla	Courtesy call
10	368	Naemul/13	Baekje	Silla	Envoy
11	392	Naemul/37/1	Silla	Goguryo	Sent a hostage
12	401	Naemul/46/7	Goguryo	Silla	Sent back a hostage
13	402	Silsung/1/3	Silla	Wa	Sent a hostage
14	412	Silsung/11	Silla	Goguryo	Sent a hostage
15	424	Nulji/8/2	Silla	Goguryo	Envoy
16	433	Nulji/17/7	Baekje	Silla	Sent envoys, friendly relations
17	485	Soji/7/5	Baekje	Silla	Envoy, friendly relations
18	493	Soji/15/3	Baekje	Silla	Marriage, accepted
19	522	Bubheung/9/3	Gaya	Silla	Marriage, accepted
20	524	Bubheung/11/9	Gaya	Silla	Gaya king audienced to king Bubheung
21	541	Jinheung/2	Baekje	Silla	Envoy, friendly relations
22	553	Jinheung/14	Baekje	Silla	Baekje king sent a princess
23	578	Jinji/3/7	Silla	Baekje	Gave them a fortification
24	698	Hyoso/7/3	Japan	Silla	Envoy, friendly relations

Note: Since state-level society is assumed to emerge at the end of the fourth century A.D., events below the dotted-line are dated after state formation.

Evidence of Warfare: Fortification

According to the *Samguk sagi*, Silla contained a great number of fortifications in its territory (see Appendix A). Many of them were directly associated with the warfare that had occurred before the emergence of the Silla Kingdom, but fortifications constructed during the Silla Dynasty are also recorded in the *Samguk sagi*. As can be seen in the table (Table 12), although the majority of the fortifications were constructed after the fifth century A.D., some of them (13.8%) were constructed before the fourth century A.D. Historical documents apparently indicate that some of the fortifications in the Silla territory were already in place by the Jin Han period as discussed in the earlier section of the chapter. Thus, the importance of warfare, whether it was defensive or offensive, is manifested.

It is important to note that many fortifications, and some religious temple and monumental architecture suddenly began to be built from the fifth century A.D. This may indicate the emergence of a strongly centralized sociopolitical government, since construction of large structures, including monumental edifices is generally considered to be one of the diagnostic features of the presence of a state level organization. The overall circumstance corresponds by and large with historical facts discussed above. For instance, King Naemul established a hereditary kingship succession and adopted 'Maribgan' as a different term for king, which indicates stronger political power.

As can be seen in Appendix A, a number of conflicts between the Silla Kingdom and the other two kingdoms and neighboring polities were strongly related to attacking and conquering fortifications. The majority of battles took

Table 12. The Frequency of Construction Works for the Silla Kingdom
Recorded in the *Samguk sagi*.

Time (century)	Fortification	Palace	Temple	Other	Total
1 B.C.	1	1	0	0	2
1 A.D.	2	0	0	0	2
2 A.D.	3	2	0	1	6
3 A.D.	3	0	0	1	4
4 A.D.	0	0	0	0	0
5 A.D.	18	1	0	1	20
6 A.D.	18	0	6	0	24
7 A.D.	20	3	8	1	32
Total	65	7	14	4	155

place in the vicinity of, or surrounding, fortifications (Kang 1994). The main reason for this is that fortifications of the Three Kingdoms period have functioned as centers of residential area and concomitantly were an integral part of local economics and politics. The appearance of so many fortifications in the historical accounts (including the construction of them) strongly indicates that the frequency of occurrence of warfare rapidly increased in the territory of the Silla Kingdom.

Evidence for frequent warfare between the first half of the millennium A.D. has been clearly manifested archaeologically by the discovery of fortifications all over the Silla territory and the Korean peninsula in general. Up until the present, approximately 160 fortifications assumed to be constructed before the Unification of the Three Kingdoms (i.e., before the seventh century) have been identified in the Silla territory alone (Lee, W. K. 1980:340-452; Pak 1992). If all the fortifications located in Korea are considered, the number becomes very great. Thus, it is often said that "Korea is the country of the fortification" (Pak 1992:81). Along with the fortifications, a great deal of archaeological evidence for intense warfare during the same time period includes numerous weaponry artifacts excavated from burials in the study area. This evidence shall be discussed in more detail in the following chapter.

Internal Conflict

Marxist theorists have emphasized the importance of internal socioeconomic conflict (i.e., class struggle between nobles and commoners or the rich and the poor) (Childe 1964:107-108; Engles 1972; Fried 1967; Harris

1977:4-5, 1979:91-92). The historical evidence from the *Samguk sagi* does not support dialectic arguments for the Silla Kingdom. There were a few internal social or political conflicts between secondary political centers (i.e., subordinate polities) and the primary center of Silla (i.e., centralized government) during its chiefdom stage documented in the *Samguk sagi* (Table 13). But this is not necessarily classifiable as class struggle. The internal conflicts that occurred were rebellions against the government of Silla (see Table 13, Nos. 1 to 3), and internal conflicts over political succession to the Kingship between or among royal families (see Table 13, No. 4). Thus, in a strict sense, there was no *class conflict* between elite rulers and commoners or the rich land owners and poor labor workers, as suggested by some scholars in the case of the development of the Silla Kingdom. The historical accounts concerning internal conflicts in the table for the entire history of the Silla Kingdom are equivocal to begin with, and are not enough to claim the importance of internal conflict. This strongly indicates that internal class-related socio-economic-political-conflict was not a key factor for the formation of the Silla Kingdom. Thus, the process of the transformation of the Silla Kingdom should be understood not simply as a result of internal process but as a result of external process in terms of dynamic interaction with other kingdoms and many neighboring polities.

In summary, defensive warfare, specifically in the form of invasion from outside the region, was clearly an important factor fostering the consolidation of the Silla polity. At the same time, offensive warfare carried out by Silla in conjunction with its territorial expansion decisively made the in-group larger and eventually created a hierarchic political organization

Table 13. Internal Conflicts in the Silla Kingdom Appearing in the *Samguk sagi* (Until the Unification of the Three Kingdoms, 668 A.D.).

No.	Date (A.D.)	King/year	Events
1	104	Pasa/25	When Siljiguk rebelled, Silla organized military forces and defeated it. Silla relocated the people to the southern suburbs of Silla.
2	146	Ilung/13	When Abdok rebelled, Silla organized military forces and repressed them. [Silla] relocated them to southern part [of Silla].
3	165	A-Dalra/12	A-chan Gilsun escaped to Baekje, because he was afraid of being killed when his rebellion plot was disclosed. The king [of Silla] asked Baekje to return him, but Baekje declined.
4	417	Nulji/1	Nulji regicided the King [Silsung] and became the King
5	562	Jinheung/23	When Gaya rebelled, the King ordered Isabu to beat [them] and Sadaham came to help him. [Gaya was suppressed]
6	631	Jinpyung/53	A plot to overthrow the government by Ichan Chilsuk and Achan Sukpum was discovered and rebellion failed.
7	647	Sunduk/16	Bedam and Yumjong organized military forces and fought. [They failed].
8	660	Muyeol/7	Mochuk was killed. Originally he was of the Silla people, but he escaped to Baekje and conspired with Gumil who inhabited Daeya Fortification when Baekje attacked and collapsed it
9	664	Munmu/4	Baekje people aggregated in Saja Fortification and rebelled. The chief of Woongjin organized military forces and defeated them.

Note: Since state-level society is assumed to emerge at the end of the fourth century A.D., events below the dotted-line are dated after state formation.

controlling a bigger territory. Offensive warfares between the Silla kingdom and adjacent Kingdoms and polities between the first and third centuries, the defeat of weaker polities, and their incorporation into ever growing, victorious Silla Kingdom nourished circumstances necessary for the transformation of the Silla. Thus, both defensive and offensive warfares played a key role for the intensification and the emergence of hierarchical institutions in the course of the development of Silla toward a state level organization.

Factors Conducive to Warfare: Perspective from Historical Documents

Demographic Dynamics

Numerous evolutionary theorists have emphasized the correlation between population pressure in circumscribed environments and the emergence of the state. In particular, ecological anthropologists have emphasized that population growth in conjunction with shortage of arable land (i.e., insufficient subsistence resources), followed by intercommunity competition, was the principle mechanism causing sociocultural change and ultimately contributing to the emergence of the state (Carneiro 1970, 1988; Ferguson 1984; Harner 1970:68; Harris 1971:227-228, 1972, 1979:102-103; Johnson and Earle 1987:16-18; Larson 1972; Sanders and Price 1968:230-232; Webster 1975). These generalizations were supported on the basis that "war occurs even when appreciable population pressure is absent and when none of the belligerents either needs or seeks more land or other resources" (Vayda 1974:183). Other researchers have proposed that population growth in

conjunction with limited subsistent resources may be the principal cause of warfare, but it is not necessarily always caused solely or mainly by such pressure (Cowgill 1975; Dumond 1972:310; Gibson 1974; Vayda 1974:184). It also has been pointed out that population growth cannot account for the entire course of history, since it must be assumed that other processes are also at work in any given case (Dumond 1972:309; Harner 1970:68). Also war may occur "as a corrective response to problems not of overpopulation but of underpopulation" (Vayda 1974:184). That is,

Autonomous local groups are small enough in much of the primitive world to be subject to considerable fluctuations in size, sex ratio, and age distribution as a result of chance variations in natality and mortality; it has been noted that some such groups, as, for example, some Indian groups in central Brazil (28, p. 473), compensate for the effect of these variations by resorting to warfare that involves taking captives belonging to appropriate age and sex categories [Vayda 1974:184].

Redmond (1994) also finds that, among the Yanomamö and Jívaro in northern South America, tribal warfare is motivated by the desire for looting valuables, abducting women, and taking revenge rather than the desire for subsistent resources. Similar cases in South America have been observed by many other scholars (Chagnon 1983:170-189; Helms 1994; Johnson and Earle 1987:124, 134). These examples strongly suggests that the relationship between population pressure and competition for arable land acquisition in terms of subsistence resources is not as much strong as many scholars have thought.

In this section the correlation between population pressure and warfare will be examined by using the available documentary sources such as the *San quo chi*, the *Samguk sagi*, and the *Samguk yusa*. As is often the case, since

literary sources are not sufficient to assess the dynamics of population of the past, we should adopt other supplementary research methods. Especially, carefully designed archaeological work is one of them. There are many different ways to infer demographic information such as population size, density, and growth over the years in the archaeological record. The sources most frequently used are burials with skeletal remains, habitation areas with dwellings, total amounts of artifact and ecofacts, and historical and ethnohistoric records (Hassan 1978:51). In the past, a few Korean archaeologists and historians have attempted to establish demographic studies for pre/protohistoric Korea (Choi, M. L. 1987:68-71; Kim, J. B. 1986:224-229; Lee, J. W. 1982:53-54; Lee, Y. J. 1980:191). Yet, those studies are difficult to accommodate to this study, because there is a difference between them and this dissertation in terms of research orientation. Suffice it to note that there is a definite need for Korean archaeologists to consider different research designs if they are to produce the kinds of information appropriate for demographic studies.

Fortunately, there are a few historical documents relevant to the study of demography for the time period of interest. Though far from satisfactory, they provide valuable information concerning demography of ancient Korea. By utilizing some of the literary sources available, I investigate the demographic dynamics for the Silla Kingdom, and discuss whether population pressure contributed to the occurrence of warfare in the study area.

The *San quo chi* provides gross estimates of the demographics of the Sam Han polities. By examining this source, it is possible to assess the overall

population size, distribution, and growth during the early time period (Jin Han) of the Silla Kingdom. According to the *San quo chi*:

There are slightly more than 50 countries [in Ma Han]. Larger *guk* [polities] consist of approximately 10,000 of households and smaller *guk* [polities] consist of several thousands of households which make a total approximately 100,000 households....There are a total of 24 *guks* [polities] in Byun Han and Jin Han [12 polities each]. Larger *guks* [polities] consists of between 4000 and 5000 households and smaller *guks* [polities] consists of between 600 and 700 households which makes a total between 40,000 and 50,000 households [Chen shou 1987:192-196; translation by the author].

These population figures are summarized in Table 14. The population density in the Ma Han region (the Baekje Kingdom) is much higher than that of both the Byun Han (Gaya) and Jin Han (the Silla Kingdom). This is mainly due to the fact that arable land in the Ma Han region is much more abundant than in the other two regions, which contain huge mountainous areas. Considering all historical and archaeological data available, it is not unreasonable to assume that Saro (pre-Silla Kingdom) was one of the largest polities in the Jin Han region. If this assumption is correct, it is not unreasonable to consider that Saro may have had at least 5000 households. In terms of the size of a household, J. G. Kim (1974) estimated that there were four to five persons per nuclear family household. This was based upon the size of the semi-subterranean pit houses in the Bronze Age of Korea. His estimation with a slight modification (five or six per pithouse) has been widely used by many Korean scholars as an average family composition in terms of the demography of ancient Korea (Lee, J. W. 1982; Kim, J. B. 1986:228-229).

Table 14. Population in the Sam Han Region Between the First and Third Century A.D.

	No. of polities	Household		Total (Households Midpoint)	Total estimated Population ^a
		Large polity (Midpoint)	Small polity (Midpoint)		
Ma Han	54	10,000	5000	100,000	500,000
Byun Han	12	4500	650	45,000	225,000
Jin Han	12	4500	650	45,000	225,000
Total	78	19,000	6300	190,000	950,000

^aEstimated number of person per household is five.

Although both Bronze and Iron Age people(s) practiced wet-rice agriculture, there must have been a difference between the two time periods in terms of total yield of agricultural production per the same unit of arable land, assuming that the Iron Age people had a little more expanded arable land combined with advanced agricultural techniques such as more effective agricultural tools, irrigation, drainage, fertilizer, and flood controls. Thus, there is a possibility that more than five people may have constituted a household during the Iron Age of the Sam Han period.

Yet it is of interest to note that the average persons per household during the Three Kingdoms period was no more than five. That is, according to historical account No. 11 (see Table 14), the average household size was calculated as 4.64 persons (i.e., 3543 people/763 families = 4.64 persons) for the

middle of the seventh century A.D. in the Goguryo Kingdom. Average family composition in the Silla Kingdom may have been slightly higher than that of Goguryo, because arable land in Silla was more abundant than in Goguryo.

Another example of family composition from the historical sources is found in the *Samguk yusa*. According to this source, there were *one hundred households* with 75,000 people in Gaya (Gumgwan Gaya, one of the largest polities in the Byun Han area, location of the modern Gimhae city). This population size is unacceptable, because of the implausible number of persons per household that it implies. Some Korean historians interpret the one hundred as ten thousand by assuming that Yeon Il, the author of the *Samguk yusa*, made a mistake on one Chinese character (Lee, J. W. 1982:18). If we accept Lee's (1982) interpretation, an average of 7.5 persons lived in a household during the first century A.D. The Byun Han area is very well known for its fertile land, consequently it can be assumed that the population density in conjunction with carrying capacity was relatively high. All things being considered, however, the figure of five persons per household is adopted as the average size of family composition. Thus, by utilizing the demographic information recorded in the *San quo chi*, the population size for the Saro (pre-Silla Kingdom) during the second century A.D. (midpoint between the first and third century A.D.) could be estimated as follows:

$$5000 \text{ (households)} \times 5 \text{ (persons)} = 25,000 \text{ people}$$

Additionally, there is another historical record directly related to population size in the Silla Kingdom in the *Samguk yusa*. According to the

literary source, there were 178,936 *households* in Gumsung, the capital of the Silla Kingdom during its heyday (ca. 750 A.D.). If we accept this number and multiply by five (as average persons per household), the total population becomes 894,680 people who lived in the capital alone. This is also considered to be an error made by the compiler of the document, because the total size of the capital (ca. 187 km²) is not large enough to accommodate that many people (it would yield population density of 4784.4 persons/km²). Therefore it is reasonable to interpret the number (178,936) as the total population size (Lee, J. W. 1982:30). By combining the demographic figures appearing in the literary sources, it is possible to estimate the rate of population growth for the Saro polity.

To determine the annual rate of population growth (r), the following Malthusian model is commonly used:

$$N = N_0 e^{kt}$$

where N is the final population size reached from the initial population N_0 after time elapsed (t) (Hassan 1978:69, 1981:139). Thus, the annual rate of population growth (k) is determined by the following equation:

$$N = N_0 e^{kt}$$

$$N/N_0 = e^{kt}$$

$$\ln(N/N_0) = \ln(e^{kt}) = kt$$

$$k = \ln(N/N_0) / t$$

As was described above, the initial population size of the Saro polity is assumed to be 25,000 at around 250 A.D., based upon the *San quo chi*, and it is

also assumed to have reached 178,936 in heyday of the Silla Kingdom at around 750 A.D. based upon the *Samguk yusa*. Thus, the annual rate of population growth for the Saro polity for 500 years can be determined as follows:

$$\begin{aligned} k &= \ln (178,936 / 25,000) / 500 \\ &= 0.003936 \\ &= 0.394 \% \end{aligned}$$

This means that population increased 3.94 persons per 1000 per year in the study area. This annual population rate seems relatively high, considering the average rate of growth of European towns and cities from the sixteenth to the seventeenth centuries was less than 0.6% and that of the European population as a whole was about 0.4% (Hassan 1981:234). Yet, overall this population growth rate is not considered to be high. According to Cowgill (1975),

Surges implying rates of natural increase of from 3 to about 7 per 1000 per year over regions up to some tens of thousands of square kilometers, sustained over two or three centuries (a doubling of population in about 240 to 100 years), have not been uncommon during the past few thousand years, but they are interspersed with periods of very slow growth or decline. Overall regional trends spanning a millennium or more show net population gains that are rarely more than what would have resulted from a steady rate of increase of 1 or 2 per 1000 per year (population doubling in 350 to 700 years), and are perhaps never over 3 per 1000 per year (doubling in about 240 years) [1975:511].

It is questionable whether this annual population growth rate (0.394%) is significant enough to cause overpopulation in terms of a critical scarcity of productive agricultural land, leading to conflict over land.

The following quote from the *San quo chi* indicates how population pressure affected the occurrence of warfare during between the first and the third centuries A.D.

At the end of Hwan Emperor [155-157 A.D.] and Young Emperor [168-170 A.D.] [of Later Han China], Han [of the Sam Han in south Korea, either Jin Han or Ma Han, source of the confusion, see above] and Ye [Dongye] became strong and prosperous. Gun [Naklang]·Hyun could not control them so that many people [of the Gun·Hyun] escaped [migrated] into the Han *guk* [Jin Han]. During the reign of the Gun An [of Later Han China, 196-220 A.D.], Gong, Son-gang divided the sterile land located south of Doonyu Hyun and made it the territory of Daebang Gun. [He then] Sent Gong, Son-mo and Jang, Chang to gather the refugees [of the Gun·Hyun]. [So they] Conscripted warriors and *attacked* Han [Jin Han] and Ye [Dongye]. People who [escaped and] resided in [Jin Han and Ye] gradually came out of [Jin Han and Dong Ye] and came back to Daebang Gun. Hereafter, Wa [ancient Japan] and Han [Jin Han] at last became subordinated to Daebang [Chen shou 1987:194; translation by the author; emphasis added].

This is a good example to argue that underpopulation, not overpopulation, was a key factor in the occurrence of warfare. Judging from the context, the Naklang and Daebang commanderies may have lost a great number of people who must have been engaged in various kinds of production activities such as agricultural and manufacturing work, and labor work in general. On the other hand, warfare described in this historical account is not directly related to the state formation process. It shows that there were both sociopolitical interactions and military confrontations taking

place between the Naklang and Daebang commanderies and local autonomous polities (Sam Han in the Korean peninsula, and even Wa [ancient Japan]) during the middle of the second and the beginning of the third century A.D. This chronicle indicates that Sam Han in general was becoming strong enough to manage warfare against the Naklang and Daebang Chinese commanderies located in northwestern Korea.

The reason is not clearly stated, but probably due to a heavy taxation and frequent levies, people from the Naklang and Daebang commanderies escaped into the territory of Jin Han of Sam Han and of Dong Ye. If the annual population growth rate was in fact higher than the rate computed above (0.394%), this provides a good example to show that population movement (migration) also played a key role in rapid population increase. Two commanderies organized military forces and operated a military campaign to invade Jin Han and Dong Ye. Eventually they beat Sam Han in battles and made Sam Han their subordinate. More importantly they forced the refugees to return to their original territories.

The above military campaign strongly indicates that the reason warfare broke out between the two Chinese commanderies and the local indigenous polities was not because of population pressure. Rather, warfare appears to have strongly been motivated by a desire to obtain captives for labor forces. In other words, if there was any population pressure, it was not regarded as a resource stress. Instead, a sizable population was regarded as one source of wealth, since people must pay taxes, and make tribute, and provide *corvée* labor. Those people who escaped from the Naklang and Daebang

Commanderies to neighboring polities (i.e., Jin Han and Dong Ye) may have done so to avoid heavy taxes or *corvée*, as shall be seen below.

Also it is apparent that both Naklang and Daebang commanderies were also interested in territorial acquisition. In this case, the motivation for warfare seems to be twofold: territorial expansion and to acquire arable land to garner populations who must have been a source of taxation and *corvée*. The above examples apparently indicate that another process (e.g., politicoeconomics in this case) than stereotypic population growth in a circumscribed geographic area may have been at work in the course of the formation of a state-level society. In short, population pressure does not seem to have been a critical factor in these conflicts.

Thus, as was briefly discussed in the previous chapter, population was not just a negative ecological factor (i.e., the food consumer), but rather a positive ecological factor (i.e., the food/goods producer, sources of labor forces, and source of wealth). The labor production of these people, both in agriculture and the manufacture of tributary goods, would have increased the wealth of their elite owners. Therefore, whenever sociopolitical conflict took place, population movement became a critical issue between/among polities.

In many other cases, when Baekje, Gaya, Wa, and Silla were involved in either offensive or defensive warfare, they were interested in capturing people and taking them to their countries. Item No. 15 in Appendix A is an exceptional example. The historical account (Yeom Sa Chi) concerns securing captives for labor forces. According to this historical account, Jin Han attacked and captured 1500 Naklang people and exploited them as labor resources for three years. If Jin Han had a problem with population pressure (i.e., lack of

food to support the extra population), they would not have kept them for that long unless they felt they could obtain something from them.

Eventually the Naklang Commandery not only took 1000 people back (after 500 people had already died) but also took as many as 15,000 indigenous people from Jin Han as compensation for 500 dead Naklang people. That was the outcome of a political negotiation made between the two polities to prevent war. Thus, if warfare had occurred between the two polities, the key factor was not population growth in terms of resource stress but instead securing populations in terms of the acquisition of labor forces (*contra* Carneiro 1988; Cowgill 1975; see Dumond 1972:309).

We can assume that those captured people were forced to become slaves or at least subordinates who were engaged in basic material production activities (depending on specific individual skills) in a hostile country. Thus, as argued by many scholars, population pressure within circumscribed environments is not necessarily correlated with warfare. For example, Dumond (1965) states that population growth may have played a positive ecological role. In other words, population growth can serve as a spur toward improvement of subsistence and commerce; these, by raising total income, encourage the growth of further population. These relationships are termed "reciprocal" (Dumond 1965:320).

The stereotypic formula 'population growth in circumscribed environments causes warfare' generated by Carneiro (1970, 1972, 1988), has received a great deal of scholarly attention. Especially, cultural materialists have attempted to relate population growth to the occurrence of warfare from the perspective of an adaptive strategy (e.g., Harris 1971; Larson 1972; Vayda

1971, 1974). It turns out that was not the case in the study area. The oversimplified viewpoint needs to be reconsidered at least in this case (see Hallpike 1973, for a detailed argument).

In summary, population during the Korean protohistoric period was regarded as a source of labor forces rather than the burden which many anthropologists and archaeologists have proposed. The correlation between population pressure and occurrence of warfare is weak. In some occasions the reverse is true, that is, warfare may have occurred because of the lack of appropriate population (e.g., unbalanced sex and age ratios) (Oberg 1955:473-474; Vayda 1974:184).

Environmental Stresses

In this section, crucial variables of environmental stress recorded in the *Samguk sagi*, possibly responsible as causes of warfare, will be examined. Environmental stresses which human populations commonly encountered in the pre- and proto-historic period of usually resulted from a sudden climatic change over short-term period and included drought, heavy rain, typhoon, frost, unusual temperature fluctuation, and snow. Along with these variables, geomorphological transformations such as soil exhaustion, and overpopulation beyond the carrying capacity of the area also have been considered as contributing to environmental stress (Haas 1990:177). Environmental stresses in a certain region under investigation has been considered one of the most important issues by many archaeologists for the explanation of sociocultural change (e.g., Braun and Plog 1982; Haas 1990). Since specific archaeological data in terms of environmental stresses in the

southern Korean study area have not been documented for the time period of the study, utilizing the *Samguk sagi* provides important insight into the environmental stresses that were present, how they were associated with societal change, and especially how they were correlated with the occurrence of warfare will be examined.

The document mentions various kinds of environmental phenomena as well as different types of natural calamities that took place from the beginning of the pre-Silla Kingdom (B.C. 57) to its end (935 A.D.).

Examination of these variables concerning environmental phenomena is not significant *per se*. They are important, because those variables are directly related to determining crop success or failure (leading to abundance or scarcity of food resources) for a given year. Furthermore, continuation of chronic environmental deterioration may have caused intra- or inter-societal conflict over insufficient subsistent resources. By analyzing some of the key references to environmental deterioration that recorded in the *Samguk sagi*, it is possible to examine whether they are correlated with the occurrence of warfare.

The frequency of environmental stresses recorded in the *Samguk sagi* including floods, droughts, frost, epidemic disease, snow, extremely low and high temperature, storms, and many different kinds of portents, followed by the countermeasures taken by kings of the Silla Kingdom related to the crop harvest are represented in Table 15. Natural environment not relevant to the present research such as comets, novae, lightning and thundering, rainbows, and earthquakes, are not included in the table.

Table 15. Environmental Phenomena Appearing in the Annals of the Silla Kingdom in the *Samguk Sagi*.

Time	Drought	Flood/ Rain	Typhoon	Snow	Locust	High Temp.	Hail	Frost	Epidemic disease	Crop failure	Total
1 C.B.C.	0	0	0	0	0	0	0	0	0	0	0
1 C.A.D.	4	2	3	0	2	2	0	0	1	0	14
2 C.A.D.	6	6	2	3	3	2	4	4	3	2	35
3 C.A.D.	9	3	2	1	3	1	3	2	1	2	27
4 C.A.D.	6	2	0	0	4	1	1	1	1	3	19
5 C.A.D.	6	8	1	0	3	1	4	4	2	3	32
6 C.A.D.	2	1	0	1	0	0	0	1	0	0	5
7 C.A.D.	3	3	1	2	0	1	1	2	0	1	14
8 C.A.D.	10	3	3	4	5	4	6	2	3	7	47
Total	46	28	12	11	20	12	19	16	11	18	193

As can be seen in Table 15, these variables are directly related to agricultural products, and ultimately to famine and resource stress. To examine how factors of environmental stress changed from a long-term perspective, a figure is made based upon the table (Figure 15). The graph indicates patterns of fluctuations in terms of environmental stress. In particular, it is of interest to examine whether environmental stresses are correlated with the occurrence of warfare in the course of the development of the Silla Kingdom (Figure 16). Two sets of data, consisting of the frequency of environmental stress, and the frequency of occurrence of warfare during the same century, are combined in Table 16. These frequencies were derived according to the total number of events per 100 years. It is assumed here that agricultural practices for the given time period were heavily influenced by the environmental variables mentioned above. In particular, those variables may have decisively contributed to crop failure. In turn, crop failure leading to insufficient food may have motivated people to raid other village(s) to obtain subsistence resources.

As can be seen in Figure 16, the two graphs do not directly correspond with each other; yet, the overall the trend is similar. That is, as environmental deterioration increases, the frequency of warfare increases, and vice versa. A significant anomaly occurred during the seventh century when there were far more incidences of warfare than environmental stresses because of the unification war instigated by the Silla Kingdom. During this time period, it is obvious that sociopolitical phenomena must have played a more important role

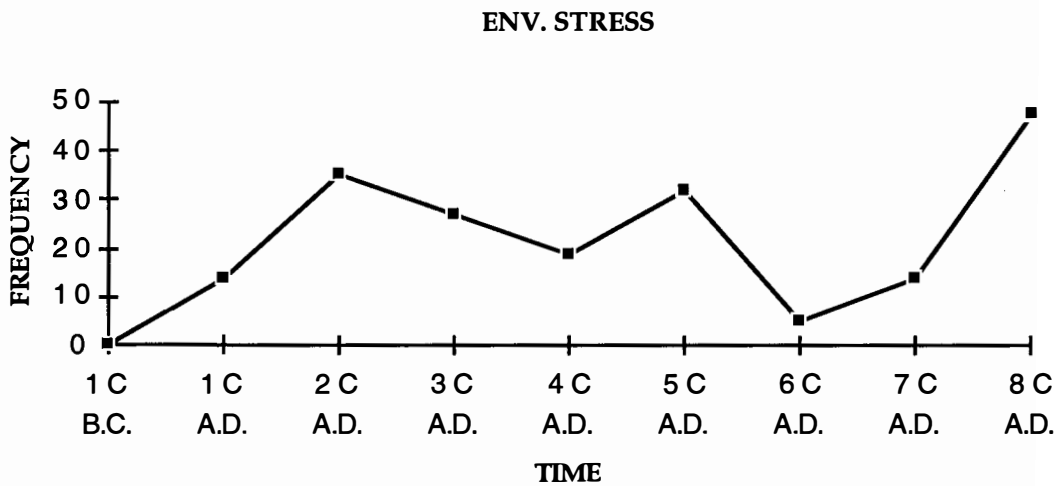


Figure 15. Temporal variations of the frequencies of environmental stresses recorded in the *Samguk sagi*.

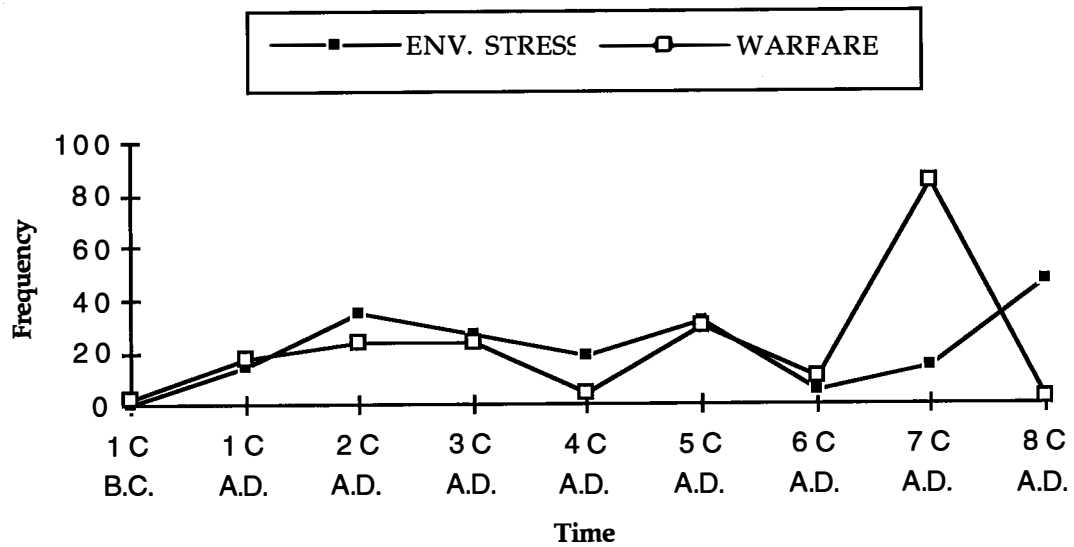


Figure 16. Temporal variations of the frequencies of environmental stresses compared against warfare, as recorded in the *Samguk sagi*.

Table 16. Frequencies of Environmental Stress and Warfare Recorded in the *Samguk sagi*.

Date	Frequency of Warfare (y)	Frequency of Environmental Stress (x)
1 C B.C.	2	0
1 C A.D.	17	14
2 C A.D.	24	35
3 C A.D.	24	27
4 C A.D.	4	19
5 C A.D.	30	32
6 C A.D.	10	5
7 C A.D. ^a	85	14
8 C A.D. ^b	(2)	(47)
Total	196 (198)	146 (193)

^aOutlier, eliminated.

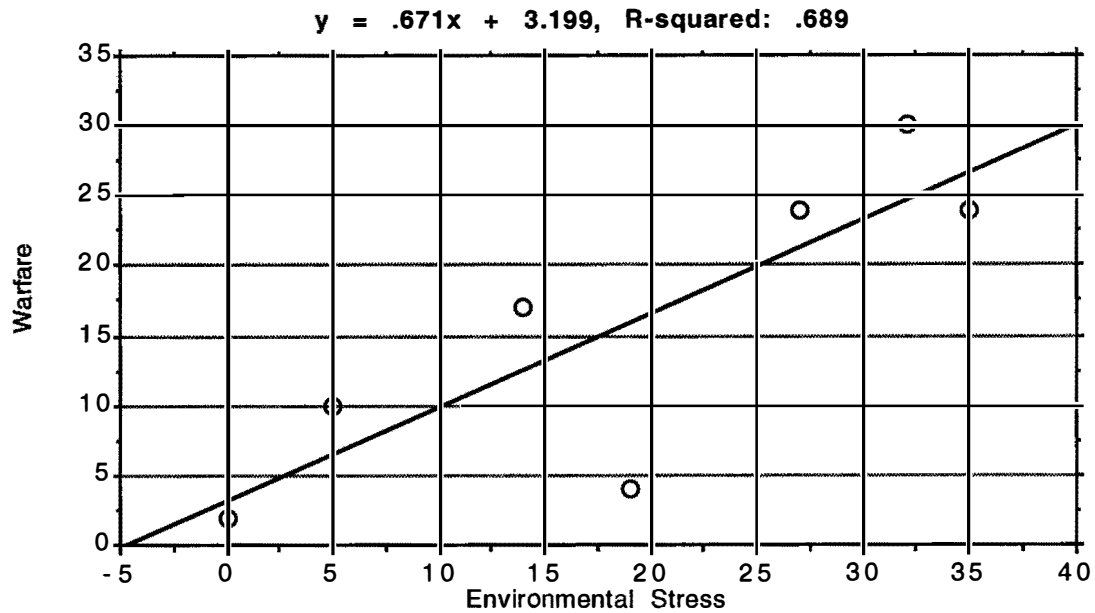
^bAfter the unification of the Three Kingdoms, eliminated.

than environmental conditions, but it is notable that there was a slight increase in terms of environmental stress as well.

Further statistical analysis provides a closer analysis of the relationship between environmental stress and the occurrence of warfare. First of all, for the purpose of visual inspection of the relationship between environmental stress as the independent variable (x) and warfare as the dependent variable (y), a scattergram is plotted (Figure 17 and Table 17). As can be seen in Figure 17 there is a positive linear relationship between the two variables. This implies that as the frequency of environmental stress increases, the frequency of warfare may also be expected to increase. Therefore, a correlation analysis employing the Pearson's correlation coefficient is appropriately applied to these data.

Appropriate use of correlation analysis requires that the data used meet certain criteria. Firstly, variables must be measured on an interval or ratio scale (Kachigan 1986:206), a requirement which is met with these raw count data. Secondly, the use of the Pearson's '*r*' correlation coefficient assumes that relationships between variables are best described by a linear model (Davis 1986:40; Kachigan 1986:205-206; Speth and Johnson 1976:36). As mentioned above, all variable pairs except those for the fourth century show linear tendencies (see Figure 17), and thus satisfy the criterion. A visual inspection of crossplots is the best way to detect linear relationships between variables (Carroll 1961:360). It can be seen from the plot that a straight line would adequately describe the trend in the data.

To examine the nature of the relationship between the two variables, a linear regression analysis was performed. This analysis enables us to



df: 6, R: 0.83, R-squared: 0.689, Adj. R-squared: 0.626, and Std. Error: 6.607

Figure 17. Scattergram of the frequency of environmental stress on occurrences of warfare.

Table 17. ANOVA for Significance of Regression of the Frequency of Weapon on Time.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F - test	Significance
Regression	1	482.563	482.563	11.053	Significant at the $\alpha = 5\%$ level
Residual	5	218.295	43.659	p=0.0209	
Total	6	700.857			

know the following: 1) the nature of the relationship in the form of a mathematical equation; 2) whether or not a relationship exists between the environmental condition and warfare; 3) the degree of accuracy of the description. Table 18 has been combined from the two data sets.

First of all, the outliers observed in the seventh and eighth centuries were eliminated. Since references to warfare recorded during that time period were not related to state formation but unification of the Three Kingdoms, they should be excluded from consideration.

In contrast, there is no environmental stress in the first century B.C. However, this does not significantly effect the linear relationship . Therefore, it is not necessary to eliminate the zero from the data set.

Using the computational formula, $y' = ax + b$, for S_{xx} and S_{xy} , we have, from Table 17 (see Table 17),

$$S_{xx} = \sum x^2 - (\sum x)^2 / n = 3560 - (132)^2 / 7 = 1079.9$$

$$S_{xy} = \sum xy - (\sum x)(\sum y) / n = 2812 - (132)(111) / 7 = 718.9$$

$$S_{yy} = \sum y^2 - (\sum y)^2 / n = 2461 - (111)^2 / n = 700.9$$

The least squares estimate for a is,

$$a = S_{xy} / S_{xx} = 718.9 / 1070.9 = 0.67.$$

The sample means of x and y are: $\bar{x} = \sum x / n = 149 / 7 = 21.3$

$$\text{and } \bar{y} = \sum y / n = 111 / 7 = 15.9.$$

Replacing the calculated values into the formula for a , we have

$$b = \bar{y} - a\bar{x} = 15.9 - (0.67)(21.3) = 3.24.$$

Therefore, the least squares equation for these data is $y' = 3.24 + 0.647x$ which is plotted in Figure 17. The predicted value of y (the frequency of

Table 18. Calculations for Obtaining the Slope b and Intercept a of the Best-Fitting Regression Line.

Time	Env. Stress (x)	Warfare (y)	X^2	Y^2	XY
1 C.B.C.	0	2	0	4	0
1 C.A.D.	14	17	196	289	238
2 C.A.D.	35	24	1225	576	840
3 C.A.D.	27	24	729	576	648
4 C.A.D.	19	4	361	16	76
5 C.A.D.	32	30	1024	900	960
6 C.A.D.	5	10	25	100	50
Total	132	111	3560	2461	2812

$n = 7$

Mean of $X = 18.9$

Mean of $Y = 15.9$

warfare occurrence) for any value of x (environmental stress) is given by a point on the line and can be calculated according to the equation.

It is necessary to test the significance of the slope b by using the sample regression equation. The basic assumption is that if there is no relationship between the two variables of environmental stress and warfare, then the slope of the regression equation would be expected to be close to zero.

Statistical tests for slope a , a t statistic ($t = \text{estimate}/\text{standard error}$) is used as follows:

$$H_0 : a = 0$$

$$H_a : a \neq 0$$

$$\text{Test Statistic} : a / (S_e / \sqrt{S_{xx}}) = 0.67 / (6.62 / 32.72) = 3.31$$

where

$$S_e = \text{SSE}/N-2, \text{ and } \text{SSE} = S_{yy} - aS_{xy}.$$

$$\text{SSE} = 700.9 - (0.67) 718.9 = 219.2$$

$$S_e^2 = 219.2/7-2 = 43.84,$$

$$\text{Thus, } S_e = 6.62$$

The null hypothesis should be rejected if the computed t is greater than a given value of $\alpha = 0.05$ significance level using a one-tailed test with degrees of freedom $df = n - 2$. Since $t = 3.35$ is greater than 2.015, we have evidence to reject the null hypothesis ($0.01 < p\text{-value} < 0.025$) (see Table 17).

In conclusion, it appears that environmental stress is useful in predicting warfare. According to the statistical analysis, the data from the *Samguk sagi* suggest that the occurrence of warfare is positively correlated with environmental stress. To measure the strength of the positive linear

relationship, the correlation coefficient is computed. Given seven pairs of observations (x_7, y_7) , we can compute the correlation coefficient r as:

$$r = S_{xy} / \sqrt{S_{xx}} \sqrt{S_{yy}}$$

where $S_{yy} = \sum y^2 - (\sum y)^2 / n = 2461 - (111)^2 / 7 = 700.9$. Therefore, we have

$$r = 718.9 / \sqrt{1070.9} \sqrt{700.9} = 718.9 / 866.37 = 0.8297 \text{ (83 \%)}.$$

That is, there seems to be a strong positive linear relationship between the environmental stress and the frequency of warfare. This suggests that competition and warfare were common during periods of environmental instability and change in the protohistoric Korea, especially for the Silla polity during its development into a state-level society.

Summary

In this chapter, warfare and its role in the formation of the Silla Kingdom was examined based upon historical documents. It should be pointed out that much heavier weight was given to warfare than to irrigation works and long-distance exchange by the compiler of the *Samguk sagi*. Assessing the textual evidence in greater detail, factors of accuracy and consistent referents strongly suggest that warfare was more significant than the other two forces in the course of the sociopolitical development of the Silla Kingdom.

Based on analysis of the historical documents, warfare was a clearly prime mover that played an important role in the formation of the Silla Kingdom. Yet, the elements that caused warfare to occur in the study area turned out to be different from those that proposed by Carneiro (1970, 1988).

There was evidence that conquest warfare (i.e., offensive) is a necessary route to state formation. However, the greatest proportion of warfare that occurred in the Silla Kingdom was defensive in nature. In addition, there were many different categories of non-violent political activities such as gift-givings, sending hostages, establishing submissive tributary relationships, and voluntary submissions of autonomy, described in the historical documents. These examples obviously indicate that there were other underlying factors that are as important as warfare involved in the process of sociopolitical transformation in the Silla Kingdom. This also implies that there are many different ways for groups to compete with each other and dominate over different groups .

Possible correlations between population pressure, environmental stress and the occurrence of warfare were also examined in this chapter. According to the conventional warfare model, population pressure within a circumscribed environment has been considered to be panacea for source of all kinds of conflict in human social evolution. However, it is not always the case, and the case of ancient Korea contradicts this model. Instead, warfare apparently occurred as a result of underpopulation; populations in a given political territory were not just considered food/goods consumers but also as food producers and sources of wealth for elites (e.g., the objects of taxation and *corvées*). Finally, statistics confirm that there was a strong positive correlation between environmental stress and the occurrence of violent conflict. This implies that insufficient subsistence in short periods of time may have also been conducive to the occurrence of warfare.

The basic elements generated by Carneiro (1970, 1988) may work in some regions, but the same elements will not necessarily work in other regions. Thus, it is not appropriate to blindly apply the warfare theory without taking into consideration the unique cultural, historical, and environmental context of a specific study area under examination. Warfare theory may provide a plausible explanation for the emergence of the state level societies in the prehistory of Korea, but the elements which caused warfare may or may not be the same as Carneiro (1970) proposed. In short, the automatic adoption of a certain model without detailed consideration of a particular society is inappropriate.

CHAPTER VIII

ARCHAEOLOGICAL EVIDENCE OF WARFARE IN KOREAN STATE FORMATION

Introduction

The arguments concerning the role of warfare as it relates to state formation that have been made so far in this research are based upon historical documents. But these historical sources, the *Samguk sagi* in particular, are insufficient as the sole source of information and must be further evaluated using verified by archaeological data. In this chapter is examined archaeological evidence for warfare within the territory of the Silla Kingdom and its neighboring polities in the southern portion of the Korean peninsula from the first century B.C. to the fifth century A.D.

Archaeological remains in the Silla Kingdom and its vicinity have received considerable scholarly attention beginning in the early twentieth century, and have been documented in a large number of site excavation reports. The archaeological data of the Silla Kingdom and the Three Kingdoms, however, is comprised largely of mortuary remains, with relatively few investigations of residential areas, which has led to a critical sampling bias. All the archaeological data used in this research consists of mortuary evidence, since little habitational information is available (see below for detail).

In this chapter, a brief history and some problems encountered in Silla archaeology are described in a broad perspective for a better understanding of the nature of the data. Mortuary evidence was analyzed from two different perspectives. First, metal weaponry artifacts found in the burials were described in terms of their function and compared with utilitarian tools and ceremonial paraphernalia. To examine how the relative frequency of weapons and utilitarian/ceremonial artifact changed through time, descriptive statistical analyses were carried out. In addition, non-locally produced items (e.g., bronze mirrors, a stone bracelet, pottery, and a glass cup) recovered from burials were examined as evidence for the role of long-distance exchange in the state formation. Secondly, prestige grave goods (e.g., jade and gold) and the relation of grave dimensions to energy expenditure were analyzed to derive the cultural and time frame of the emergence of the Silla Kingdom as a state-level society. This was attempted in keeping with the theory that when a distinction between quantity of grave associations and quality of such goods begins to appear, a strong correlation exists between the level of social complexity of a people and the way they treat their dead (Binford 1971:21; Tainter 1978:120).

A Brief History of Silla Archaeology and Its Problems

History of Silla Archaeology

Korean archaeology was initiated by Japanese scholars around the beginning of the twentieth century. Japanese scholars have contributed to study of Korean prehistory and history over a long period. Some of their

motivations turned out to be closely associated with the Japanese government's imperialism rather than with pure academics. That is, many Japanese scholars studied Korean prehistory and history, not for its own sake, but to emphasize alleged negative aspects of Korean culture such as stagnation, Sinocentrism, endless political quarreling, colonialism, and lack of independence. To the Japanese, Korean prehistory and history were inherently primitive and essentially static. They believed that, even if there were some uniquely and distinctively advanced Korean cultures, they did not originate with indigenous Korean people but from the outcome of highly developed Chinese cultural influence through the mechanisms of diffusion and migration. It has been pointed out that this research trend was consciously or unconsciously related to the Japanese colonization of the Korean peninsula.

Japanese historians' research on ancient Korean history, derived from the early Japanese historical documents such as, the *Nihon shoki* (Chronicles of Japan) and *Kojiki* (Records of Ancient Matters), were considerably distorted. For example, by interpreting a small portion of the inscription of the monumental stele of the Great King Gwanggaeto of the Goguryeo Kingdom erected in 414 A.D., they insisted that the Japanese Yamato Court established *Mimana Nihonbu* (Office of Japan in *Mimana*), a colonial government, in the southern portion of the Korean peninsula and governed the area from the end of the fourth to the middle of the sixth centuries A.D.

By adopting Japanese historian's interpretations concerning Japanese colonialism in southern Korea during the protohistoric period, Japanese politicians attempted to justify the annexation of the Korean peninsula in

1910 (Barnes 1990:139; Grayson 1977:67). The Japanese have argued that since they occupied part of the Korean peninsula during protohistoric time, their later colonization of the Korean peninsula was natural.

Shortly after the Japanese government annexed the Korean peninsula, it established the Department of the Service of Antiquities in the Government of Chosen [Korea], and Japanese scholars began to investigate antiquities in different parts of Korea. At the beginning, they seemed to have been interested in a wide variety of Korean cultures from prehistoric (Stone age through the early Iron age) to historic time periods. Yet, Japanese archaeological investigation during the initial stage was heavily concentrated in the southern portion of the Korea peninsula (i.e., Gaya area) assumed to be the location of the purported *Mimana Nihonbu*. In spite of their intensive archeological work in the area, they failed to prove the presence of the *Mimana Nihonbu* with material evidence. Thus, a prominent Japanese historian, who has been deeply involved in Korean history, refutes the allegation of the presence of the Japanese colony in southern Korea:

At present, debate continues about the existence and character of the "Mimana Nihon Fu." The *Nihon shoki* says that it did exist. But it does not appear in Korean records. If the *Mimana Nihon Fu* had existed, there should be some relic or remains of it. To date no such site has emerged, and according to archaeological findings, the *Mimana Nihon Fu* did not exist. We can only conclude that it was a creation of the *Nihon shoki* [Hatada 1979:17].

After failing to identify the presence of the *Mimana Nihonbu*, not only did Japanese scholars' interest become primarily limited to the protohistoric and historic time periods but also their geographical research area shrank. They largely focused archeological investigations on sites where they expected

to find a great amount of luxurious artifacts. For example, the site of the Naklang Commandery, the core area of the Han Chinese Commandery, later the capital of the Goguryo Kingdom, and eventually the current city of Pyongyang in north Korea); and Gumsung, capital of the Silla Kingdom for nearly 1000 years, now the current city of Gyungju, both received extensive attention from Japanese scholars, due to presence of impressive royal families' mounded tombs of the Goguryo and Silla dynasties.

The majority of Japanese archaeological investigations were centered in Gyungju, as the mounded tombs of the Silla Kingdom in that area yielded a great deal of spectacular sumptuous grave offerings (e.g., gold crowns, gold belts, gold earrings, gold vessels, jade, and imported Mediterranean glass). Excavations were conducted at Gum Chong (Sword Tomb) and four other sites in 1916, the Bomunri Tombs in 1918, the Gumgwon Chong (Gold Crown Tomb) in 1921, the Gumryung Chong (Gold Bell Tomb) and the Sik-i Chong (Ornamental Shoe Tomb) in 1924, and the Suh Bong Chong (Swedish Phoenix Tomb) in 1926 (see Azumausio and Tanaka 1988:321-323 for a list of archaeological excavations carried out by Japanese scholars in Gyungju).

Attracted by exotic grave goods, the majority of archaeological projects carried out by Japanese scholars in the Silla area and Korea, in general, continued to concentrate on graves. Archaeological research focusing on spectacular finds was not confined to Japanese scholars but was throughout the world before World War II. Some of the excavations conducted in Korea were reported, but many of them remained unpublished. The unbalanced archaeological research orientation established by Japanese scholars continued

until the end of World War II in 1945. Since then, the archaeology of the Silla Kingdom has continued to be one of the most popular fields.

Unfortunately, while Japanese scholars were excavating impressive tumuli of the Silla Kingdom and other archaeological sites in Korea, not a single Korean prehistorian participated in the archaeological projects. This is partly due to the fact that few Koreans engaged in archaeology at that time. Che-won Kim (1948), a pioneering Korean archaeologist who conducted the first archaeological excavation in Korea in 1946 stated: "It was a great joy for Korean scholars to be able to at last to dig Korean earth, for under the Japanese Government General, we were not permitted to participate in archaeological work" (Kim 1948:14).

After the World War II, almost all the Japanese scholars went back to Japan. They left a handful of archeological excavation reports and a few textbooks regarding Korean archaeology which have had a great influence on the basic character and direction of present Korean archaeology. From that time on, Koreans took over all archaeological work in Korea, but few, if any, Korean scholars were fully familiar with the professional archaeological work, due to lack of adequate exposure to archaeology. Thus, Che-won Kim, the first Korean Director of Korean National Central Museum asked Kyoichi Arimitsu, a famous Japanese archaeologist who was a part-time lecturer at the Gyung-sung Imperial University (now Seoul National University) and chief administrator in the Museum of the Government of Chosen (now Korean National Central Museum) to stay in Korea to teach archaeology and museum studies to Koreans. In 1946, the Director of Korean National Central Museum let him direct and supervise the excavation of the Ho-u Chong

(Washing Vessel Tomb), one of the tumuli of the Silla Kingdom in Gyungju (Kim 1948), while training Koreans in excavation procedures. That was the very first archaeological excavation by Koreans.

Overall the Koreans had little exposure to archaeology other than that of Japanese researchers. Korean archaeology began under the influence of the Japanese archaeological tradition, which primarily focused on creating chronological sequences by using minute ceramic or burial typologies, and on stereotypic culture historical explanation of factors of culture change. Korean archaeology became an extension of Japanese archaeology in terms of general research orientation, methodology, and interpretation. This archaeological research trend, with a close link with the interpretations of historiographies, has persisted from the beginning of Korean archaeology to the present time and has been the target of criticism from Western scholars (e.g., Barnes 1983; Nelson 1983; Pearson 1985).

Influenced by both Japanese research and relatively abundant literary sources, the archaeology of Silla has become one of the most important subdisciplines. Since Gyungju had been the capital of the Silla Kingdom for nearly 1000 years (B.C. 57-936 A.D.), there are a great number of impressive tumuli and other monumental architectural remains (e.g., Buddhist relics) in the city and in Silla territory generally. Unfortunately, however, attracted by the evident and abundant archaeological sites of cemeteries and religious temples, the research orientation of Korean archaeologists has been critically biased. Either tumuli or ruined Buddhist temples in Gyungju and its adjacent areas have been the major object of Korean archaeological investigations. Thus, since neither political and ceremonial centers nor

residential areas have been identified in the study area, the archaeological record for the study of the Silla Kingdom is equivalent with the archaeology of tombs.

Until the end of the 1960s, most archaeological projects in Gyungju and elsewhere in Korea were primarily conducted by the Korean National Central Museum with few exceptions (e.g., Seoul National University 1965). During the 1970s, construction of large apartment complexes, buildings, public roads, and highways in conjunction with rapid Korean economic development have revealed a great number of archaeological sites throughout Korea. Since the Korean National Central Museum alone was not capable of investigating so many archaeological sites, many other Korean university museums were allowed to participate in archaeological excavations.

As a result of the historical and archaeological research, the Korean government recognized the historical significance of the city of Gyungju and became interested in developing the city as a source of public education in relation to Korean National history, and in promoting the city as a source of international sightseeing. Many archaeological projects were launched by the National Gyungju Museum, Institute of Cultural Properties (1985), and by many Korean university museums such as Busan University Museum (Kim and Jung 1975, Kim et al. 1980), Gyungbuk University Museum (Yun 1975), Korea University Museum (Yun, S. Y. 1975), Kyunghee University Museum (Om and Hwang 1974), and Youngnam University Museum (Kim and Lee 1975; Lee, E. C. 1975 1980). Archaeological research on the Silla Kingdom reached its peak in the 1970s and 1980s. Some salvage archaeological excavations have continued in Gyungju and adjacent areas (e.g., Gyungju

National Museum et al. 1990; Gyungbuk University Museum and Gyungnam University Museum 1991).

Despite a tremendous amount of archaeological data recovery in Gyungju, however, almost all archaeological projects began with the recovery of grave goods and ended up with simple artifact description and chronological sequence, because of the lack of problem-oriented archaeological research. Collection of ecofacts, quantification of artifacts, and the study of settlement patterns have rarely received adequate attention from Korean archaeologists. Nonetheless it is still fortunate to have these rather substandard archaeological excavation reports, because many archaeological excavations carried out earlier in Gyungju and elsewhere in Korea were not reported at all.

Extensive protohistoric mortuary data has been collected from the Silla Kingdom remains; however, virtually no habitational sites in Gyungju and adjacent areas have been reported. This biased research orientation is mainly caused by a few factors. First, mounded tombs are easy to identify on the surface, and more importantly they usually yield a great number of impressive artifacts. Second, mounded tombs are common in Korea. Excavating tumuli is extremely time consuming and exhausts financial resources. Besides, almost all archaeological research has been conducted in a spatially limited area rather than on a regional level. Most archaeological investigations have been limited to a restricted area inside of or in close proximity to the tumuli. This excavation strategy might have to be partly blamed on limited time schedules and stingy budgets as well.

An important factor that should be noted regarding the lack of investigations of living floors is that almost all prehistoric and protohistoric Korean residential areas (including Gyungju) have been continuously occupied by people over a long period of time. For example, by the time Gyungju became the capital of the Silla Kingdom, it had been continuously occupied by people for more than 2000 years. Most living floors were either superimposed or destroyed by people of later time periods. Consequently, it is presumed by archeologists that few residential areas will be discovered and thus, consciously or unconsciously, a critical sampling bias definitely has resulted in an unbalanced research trend. Settlement pattern archaeology has not received as much attention as burials from Korean archaeologists, and residential areas have been underestimated and concomitantly underrepresented. This uneven research orientation was criticized by Pearson (1985) as follows:

If the field archaeologists working on Silla would concentrate on settlements, production centers, communication networks, and agricultural systems, it would be relatively easy to reconstruct the society of this ancient state. Yet most of the work has been on graves. The focus has clearly been on loot–sumptuous grave goods. In the Silla case, the study of the rise of a rich and powerful kingdom...has been transformed into an incredibly boring study of minutiae—the endless stylistic variation of the grave objects. Many of the studies are constructions of huge tangles of sequences of unquantified, inexplicit types of objects from poorly controlled proveniences [Pearson 1985:181].

Although his comment on the archaeology of Silla is somewhat exaggerated, there is no question that Korean archaeologists can benefit from international criticism from outsiders and should strive to shift their conventional research paradigm of the study of cultural traits to that of a wide

variety of cultural phenomena from the perspective of the entire cultural system (cf. Binford 1964).

Recently, the conventional Korean archaeological research focus gradually is beginning to change. Korean archaeologists are attempting to uncover not only impressive tombs but also residential areas. Although their fundamental research design remains little changed, at least their excavation focus has expanded both horizontally and vertically, aiming towards a bigger picture in terms of cultural systems. For example, in the city of Daegu, some 45 km west of Gyungju, Youngnam University Museum (1994) has been involved in a long-term intensive settlement archaeological project, in which I participated during the summer of 1993. They have excavated extensive residential areas including cemeteries. Although they were unable to find any clear-cut house features at the site, they discovered many potential postholes for above-ground houses. In addition, they located 15 wells for drinking water, a pond (14 m x 8 m, and 1.5 m deep), four partial remnants of public roads, and enormous amounts of occupational debris apparently indicating long-term occupation of the residential area (Youngnam University Museum 1994).

A similar archaeological site is being excavated by Gyungbuk University Museum ca. 40 km away to the northwest of Daegu (Choi, Tae-sun 1994, personal communication). Both the Siji and Chilgok sites are located some distance away from Gyungju, but considered to be within the territory of the Silla Kingdom. Although the overall research design and the entire data recovery procedure is still not very well refined, locating and excavating

such a huge residential area itself beyond the tumuli is very encouraging and signals a new era of Silla and Korean archaeology.

Development of Anthropology and Archaeology in Korea

A critical factor which played an important role in the determination of the nature of current Silla and Korean archaeological interpretations is the fact that Korean archaeology has focused upon history rather than anthropology. During the Japanese colonial period, some Koreans were educated in the Department of History at Gyung-sung Imperial University (now Seoul National University). All the professors were Japanese experts on history, and they were engaged in archaeology one way or another. Some Korean students influenced by their Japanese professors became interested in archaeology. Apparently Japanese professors taught archaeology at the Department of History, since there was neither an Anthropology nor Archaeology Department at the university.

The Japanese professors who taught archaeology at the university had not been much exposed to archaeology, since the discipline of archaeology and anthropology was still quite new to the Japanese in the first place (cf. Ikawa-Smith 1982; Trigger 1989:177-180). Those Japanese professors were fundamentally historians who were interested in prehistory or in proving ancient history through association with material remains. Under the circumstances, it was natural for a few Korean history students who were interested in archaeology to be influenced by their Japanese professors' research orientation, which was almost synonymous with historiography. Korea has not been the only country utilizing the historiographical research

orientation in archaeology. China and Japan have been in a similar academic environment as well, ever since both countries were introduced to archaeology (Chang 1981; Falkenhausen 1993; Ikawa-Smith 1982).

When all the Japanese scholars who were involved in archaeological excavations in Korea went back to Japan after World War II, as was mentioned, there was almost no professional Korean archaeologist who was able to direct archaeological excavations on the Silla mounded tombs, such as the Ho-u Chong (Washing Vessel Tomb). This was the situation of Korean archaeology during the middle of the twentieth century. The situation of the lacking of expertise in Korean archaeology has not much changed until the middle of the 1970s.

To begin, the Department of Archaeology and Anthropology was established at Seoul National University only in 1961. This was the only Archaeology and Anthropology Department in Korea until the beginning of the 1980s. Consequently, a number of archaeological sites were excavated by non-archaeologists (mostly professors in the Department of History at many different universities) who were not necessarily aware of appropriate archaeological or anthropological methods and theories. Many early Korean archaeologists were more tightly linked with history than anthropology in seeking to answer questions, and generally did so in conjunction with historical events and context. To make matters worse, many archaeological sites excavated by historians during that time period were not even reported.

In 1975, the Department of Archeology and Anthropology were separated into two independent departments at Seoul National University. The Department of Anthropology was placed in the College of Social Science,

while the Department of Archaeology was combined with the Department of Art History in 1983 and remained in the College of Liberal and Arts. As a consequence, the gulf between archaeology and anthropology began to increase.

A large number of construction works continued to reveal an enormous number of archaeological sites in Korea, and the demand for archaeologists was increased. The Department of Archaeology and Anthropology at Seoul National University was not large enough to produce the substantial number of archaeologists to meet the demand. Thus, many history majors who were regularly involved in archaeological excavation projects converted ostensibly to archaeology, despite a minimal archaeological background. A number of students who switched their primary research interests from history to archaeology now became archaeology professors in many Korean universities. Many of them, in one way or another, have been influenced by modern Japanese archaeology, which is not entirely linked with anthropological archaeology.

Although it should be recognized that Japanese archeology has currently achieved a very high standard of data recovery and technical analyses, it is not well matured in terms of epistemology and philosophy of science. Consequently, young Korean archaeologists have a slightly different viewpoint in terms of theoretical and methodological approach from current Western anthropological archaeology. Their archaeological interpretation is still primarily limited to chronology, typology, and a culture historical approach, which characterized archaeology in America and European countries more than a generation ago.

For example, a few young Korean archaeologists continue to interpret culture change that occurred in Silla and southern Korea as dependent on mechanisms of invasion/migration or diffusion. According to G. C. Shin (1992), for example, the emergence of complex society in the Byun Han area (i.e., Gaya area) was directly associated with the movement of northern nomadic people. He argues this on the basis of burial disturbance and intrusive artifacts such as Ordos and Mongolian type bronze kettles and iron horse riding-gear recovered at the Daesungdong and Yeanri sites in the Gimhae area, one of the biggest Gaya polities. With these primarily selective data he argues that nomadic horse-riders of Buyouh located north of the Goguryo Kingdom in Manchuria invaded the Gaya area and established Gungwan Gaya (Shin, G. C. 1992). Thus, he simply generated another version of Egami's (1967) Horserider Theory for culture change in southern Korea.

A criticism can be made based on the presence of objects undoubtedly manufactured in Wa (ancient Japan), such as arrowheads and small disks (similar to spindle whorls) made of jade, many bronze disks with three sharp points, and tube-shaped bronze objects of which the functions are unknown (They may have been used as either weapons for battle or as the paraphernalia of shamans in terms of the symbols of power) that were discovered at the same site (Shin 1992). If migration was a critical factor for culture change in the area, the movement of Wa people should be given the same consideration as that of the nomadic people. A clear interpretive conflict exists in terms of presence of exotic material at the sites.

Overall, it seems more likely that the non-locally produced artifacts found at these sites are the outcome of interregional exchange in association with the process of local indigenous development in southern Korea. Particularly, as was discussed in Chapter V, since the *San quo chi* mentions that Byun Han (Gaya people who occupied exactly the same place as the archaeological site area) exported a great deal of iron to neighboring countries (including Wa, ancient Japan), there is persuasive evidence of historical accounts to support the archaeological data for the presence of long-distance exchange. This strongly indicates that there is a good correlation between historical documents and archaeological remains. In particular, it should be pointed out that the *San quo chi*, the Chinese historical document, can be treated as a highly reliable source on this basis.

On the other hand, some Korean archaeologists argue that the appearance of a new mortuary practice in the Silla Kingdom was a result of diffusion from the Goguryo Kingdom (Choi, J. G. 1983; Jung and Shin 1983; Kang, I. G. 1981, cited in Choi, B. H. 1992:383-384). They argue that when 50,000 Goguryo soldiers came to the aid of Silla in 400 A.D. (see Chapter VII), Silla's mortuary practices may have been heavily influenced by those of the Goguryo Kingdom. That is, the traditional tomb type of the Silla Kingdom is considered to be a wooden-chamber tomb with earthen mound, while that of Goguryo is regarded as a stone-compiled tomb. These archaeologists are assuming that because of the Goguryo Kingdom's military assistance to the Silla Kingdom, the tomb type of the Silla was greatly influenced by that of the Goguryo Kingdom's. Thus, they have suggested that the new tomb type of the Silla Kingdom, the *Juksuk Mokgwak Bun* (Stone Compiled Wooden

Chamber), was the outcome of the two peoples' contact. Furthermore, they claim that the appearance of the *Juksuk Mokgwak Bun* (Stone Compiled Wooden Chamber), a distinctive mound tomb of the Silla Kingdom, should be dated to the first quarter of the fifth century A.D. (Choi, J. G. 1983:2-3; Jung and Shin 1983:169-172).

B. H. Choi (1992) proposes yet another version of Egami's Horse-rider Theory in conjunction the sudden appearance of *Juksuk Mokgwak Bun* (Stone Compiled Wooden Chambers) in the Silla Kingdom at the beginning of the fourth century A.D. According to him, the appearance of this tomb style in the Gyungju area was the direct outcome of a northern nomadic peoples' move south, especially into the Silla area (Choi, B. H. 1992:413-415, 1993a:332). However, his argument is not supported by convincing archaeological data indicating from exactly where and why those nomadic people migrated into the territory of the Silla. Furthermore, by what means they might have conquered indigenous elites and became the royal family is still unknown.

Choi has connected the sudden appearance of the new tomb type and the movement of northern horseriders into the Silla area with the monopolization of Naemul Kim's unilinear kingship succession (Choi, B. H. 1992:414, see Chapter VII for the discussion of the political succession and the emergence of the Silla Kingdom). Although he provided similarities in many aspects of archaeological material, for example, tomb structures, artifact styles, such as animal motifs for the decoration of gold crowns, and general historical circumstances to support his argument (Choi, B. H. 1992:397-412), this speculation is not confirmed by any unequivocal historical and

archaeological data. It should be emphasized that Egami's "horserider theory" in conjunction with culture change in both Korea and Japan during the protohistoric time period has been denied by the majority of scholars (Aikens and Higuchi 1982:336; Barnes 1988:16-24; Edwards 1983; Ikawa-Smith 1980:144; Kim, J. B. 1986:134-138; Kirkland 1981), except for a few sporadic offering of modified versions (e.g., Kiley 1973; Ledyard 1975).

Thus, as can be seen above examples, there are still critical problems both in Silla and Korean archaeology. Korean archaeology is a half-century old, and now is the time to change both its theoretical and its methodological orientation toward anthropological archaeology. As long as Korean archaeologists focus only upon the paradigms of culture history and history, they will not be able to examine processual elements such as human behavior, sociopolitical relations, mechanisms responsible for culture change, local indigenous development, and more importantly cultural systems. It is not too critical whether archaeology is anthropology, archaeology is history, archaeology is archaeology, or even history is archaeology, as long as it keeps up with current world archaeology in terms of legitimate research questions and major research objectives concerning past human societies with sound theories and adequate methodologies.

Problems with the Chronology of Silla Archaeology

Western archaeologists have emphasized the importance of ^{14}C dating over typological approaches for determining the chronology of Korean archaeological features (e.g., Barnes 1983:49; Nelson 1983:53-54; Pearson 1985). There is no question that ^{14}C is one of the best chronometric dating

techniques available for the determination of the majority of the protohistoric archaeological sites in Korea. Unfortunately, many Korean archaeologists consciously or unconsciously avoid utilizing ^{14}C and use either different sources of chronometric dating, such as the historical record, or relative dating technique such as ceramic seriation to establish chronological frameworks. As Nelson (1983:53) pointed out, Korean archaeologists have a strong tendency to rely too heavily upon typology "to answer all sorts of things, especially temporal ordering." Choi, S. R. (1989:5) has commented that even if researchers were strongly interested in the establishment of the chronology of Korean archaeology, they did not put a great deal of investment into it in terms of methodological perspectives (Choi, S. R. 1989:5).

Although some Korean archaeologists recognize the importance of the ^{14}C dating technique (Choi, S. R. 1982, 1989; Kang et al. 1993), the total number of ^{14}C dates that have been obtained in Korea is still minimal. Lack of modern field archaeological methods can be partially blamed for the minimal collection of ^{14}C samples in Korea. For instance, even if archaeologists happen to come across good ^{14}C samples at sites other than wood or charcoal, such as human bones, or antler, they do not recognize these as good samples for ^{14}C dating. Then, they report that 'There was no adequate sample of material available in the features for ^{14}C dating.'

More importantly, the reason why Korean archaeologists and oriental archaeologists, in general, are reluctant to depend on ^{14}C dating method is the availability of historical sources. Korean archaeologists usually depend on such artifacts as Chinese coins, Chinese bronze mirrors, and other artifacts on which tangible absolute dates such as cyclical calendric characters in Chinese

are inscribed. By combining those sources of absolute dating with archaeological features like certain types of tombs and types of artifacts such as, ceramics, iron arrowheads, gold crowns, gold earrings, imported glasses, iron ingots, iron stirrups, and imported artifacts, they usually establish the basic chronometric chronologies for Silla and Korean archaeology.

For example, four bronze mirrors manufactured in Former Han China were discovered in Burial No. 38 of the chiefdom stage of Silla at Joyangdong, Gyungju (Choi, J. G. 1982). These bronze mirrors all have inscriptions which provide critical information concerning the depositional chronology of the artifacts and associated burials. Making certain assumptions about the circulation and the duration of the artifacts in systemic context, the excavators estimated 0 ± 20 (B.C. 20 – A.D. 20) as the chronology of the burial. A similar case is known at the Dahori [Tahori] site at Euichang, in southern Korea (Yi et al. 1989). By combining the known historical Chinese dates of the bronze mirrors in connection with Osu coins of Former Han China, Korean archaeologists estimated the chronology of the burial and accompanying artifacts as spanning a time period "from the second half of the 1st century B.C. to the first half of the 1st century A.D." (Yi et al. 1989:57).

Korean archaeologists are fundamentally skeptical about the usefulness of ^{14}C dating technique because of the range of error. They think that chronometric dating obtained from historical materials is much more accurate than that obtained from ^{14}C dating methods. When excavating either protohistoric (0 A.D.–500 A.D.), or prehistoric archaeological features (B.C. 300–0 A.D.), they are not convinced by chronometric dating techniques because of the large degree of error range. That is, Korean archaeologists

argue that the degree of error range, which occasionally reaches up to one hundred years (it largely depends on 'sigma' or standard deviation), is too large to tolerate. Thus, many Korean archaeologists and oriental archaeologists are reluctant to use ^{14}C dating techniques on protohistoric and historical archaeological sites.

For example, Korean archaeologists collected two ^{14}C samples while excavating the No. 155 Tomb of Chunma Chong (Heavenly Horse Tomb) in Gyungju. The samples were sent to the Radiocarbon Dating Laboratory of Korean Atomic Energy Research Institute (KAERI) which produced two ^{14}C dates of 1630 ± 70 B.P. or A.D. 320 (KAERI-98) and 1780 ± 90 B.P. or A.D. 170 (KAERI-99) (Bungasai Ganligyoku Bungasai Gengyusho 1975:264; Pak and Yang 1974:197). Neither sample was considered to be reliable for the chronology of the tomb. The chronology of the tomb obtained from ^{14}C dating technique indicated a much younger date than they expected, and the dates did not correspond with the chronological scheme derived from analysis of other artifacts discovered in association with the burial (Bungasai Ganligyoku Bungasai Gengyusho 1975:167-168).

Despite the ^{14}C dates, they suggested that the tomb was probably constructed during the first quarter of the sixth century A.D. based on analysis of such artifacts as gold crowns, earrings, and girdles, and ceramics. So far, less than five ^{14}C chronometric dates have been obtained for the entire archaeology of Silla, and none of them have been accepted as accurate. Thus, some Korean archaeologists who have been involved in Silla archaeology have been reluctant to utilize ^{14}C chronometric dating for high mounded

burials as well as other burials of the Silla Kingdom and Korean archaeology in general (Jung et al. 1981; Kim 1969).

Although Korean archaeologists have good historical sources for chronometric dating, as described above, a great number of critical chronological problems still remain unsolved, such as the appearance of Stone Compiled Wooden Chamber tombs in Silla, and the appearance of Gimhae Hardware pottery.

However, inscribed dates on artifacts as sources of chronometric dating also have problems. One of the critical problems with sources of chronometric dating items such as coins, bronze mirrors, and bronze weapons, is the length of inheritance or circulation time in terms of systemic context. In other words, most grave offerings were in systemic context for a certain period of time after they were manufactured (Schiffer 1972, 1976:27-47). The principle exceptions are grave goods manufactured for *grave goods sake* at a specific time for a specific occasion. Artifacts could be handed down from one generation to another for many years. Thus, the total time length of the systemic context in which a certain object exists can be prolonged, causing an ambiguous chronology.

There can be critical discrepancy between the chronology of the artifact and that of the archaeological feature (e.g., burial) to which the artifact was finally deposited, because it is difficult to know exactly how much time had elapsed until those grave goods were deposited in burials (i.e., until they transformed into archaeological context, *sensu* Schiffer 1976, 1983). This situation makes it difficult for archaeologists to obtain *true* dates even by using precise historical materials of which the date is well established.

The types of problems encountered with historical inscriptions on artifacts discovered in Gyungju are illustrated by the following examples. In 1926, Japanese archaeologists excavated one of the Silla Kingdom's tumuli which was named *Suh bong chong* (*Suh* means Sweden, *Bong* means Phoenix, and *Chong* means tomb, literally translated from Chinese characters). When Japanese archaeologists were excavating the tumulus, Adolf Gustaf VI, the prince of Sweden, participated in the project and they discovered a gold crown decorated with a Phoenix. The tumulus was thus named in honor of the Swedish prince Gustaf VI, who participated in the discovery at the site of a gold crown decorated with a Phoenix.

In the tumulus, a silver bowl was recovered on which a calendrical date was inscribed. Chinese characters were inscribed on the inside of the lid and on the bottom of the outside of the silver bowl. Among them, *Yeonsu Wonneon Sinmyo* are critical: *Yeonsu* apparently indicates the name of an era, but of whose and of what Kingdom is unknown; *Wonneon* means the very first year of the rule; and *Sinmyo* indicates cyclical characters in Chinese. The inscription seemingly provides us with *true* chronometric dates. However, two critical problems exist. First, *Yeonsu* is historically unknown as the name of an era, as it appears neither among the Chinese dynasties nor in the Three Kingdoms of Korea. Second, since *Yeonsu* is not found in either the histories of the Chinese or Korean Three Kingdoms', the cyclical character of *Sinmyo* has no reference point. Based upon the type of the tomb excavated in Silla territory, there are three possible dates for the cyclical character: 391, 451, and 511 A.D. (according to the principle of the sexagenary cycle). Some people interpret it as 391 A.D. and other people interpret it

either as 451 or 511 A.D. (i.e., 451 ± 60 , with sixty-year cycle). Recently some Korean archaeologists have supported 451 A.D. on the assumption that *Yeonsu* was the genealogy used by the royal family of the Goguryo Kingdom.

Another important issue here is that even if the chronology of the silver vessel is correct in terms of manufacturing date, we still face the problem of the length of systemic context, that is, the time the artifact spent within an ongoing behavioral system, Systemic–Systemic, or Systemic–Archaeological processes (Schiffer 1972, 1976:27-41). Thus, not all Silla archaeologists agree on the chronology, because of the unclear name of the genealogy. As discussed above, even if we do know to whom the genealogy belongs, it is still difficult to determine the exact date of the burial because of the unknown duration of the artifact in systemic context, as will be seen in another example below.

When Korean archaeologists excavated the Ho-u Chong (Washing Vessel Tomb) of the Silla Kingdom at Gyungju city in 1946, they found one bronze vessel (Ho-u) with a total of 16 Chinese characters, which include the name of King Gwanggaeto of the Goguryo Kingdom (391-413 A.D.), and a calendrical date (i.e., cyclical characters in Chinese), cast in relief (Figure 18). The cyclical characters on the bronze vessel were *Ulmyo*, corresponding to 415 A.D., two years after the king died. Thus, excavators assumed that the tomb dated to approximately to 415 A.D. (Kim 1948:65). The date is questionable on the ground that the bronze vessel was not manufactured in Silla but in Goguryo, and therefore it is difficult to know how much time had elapsed

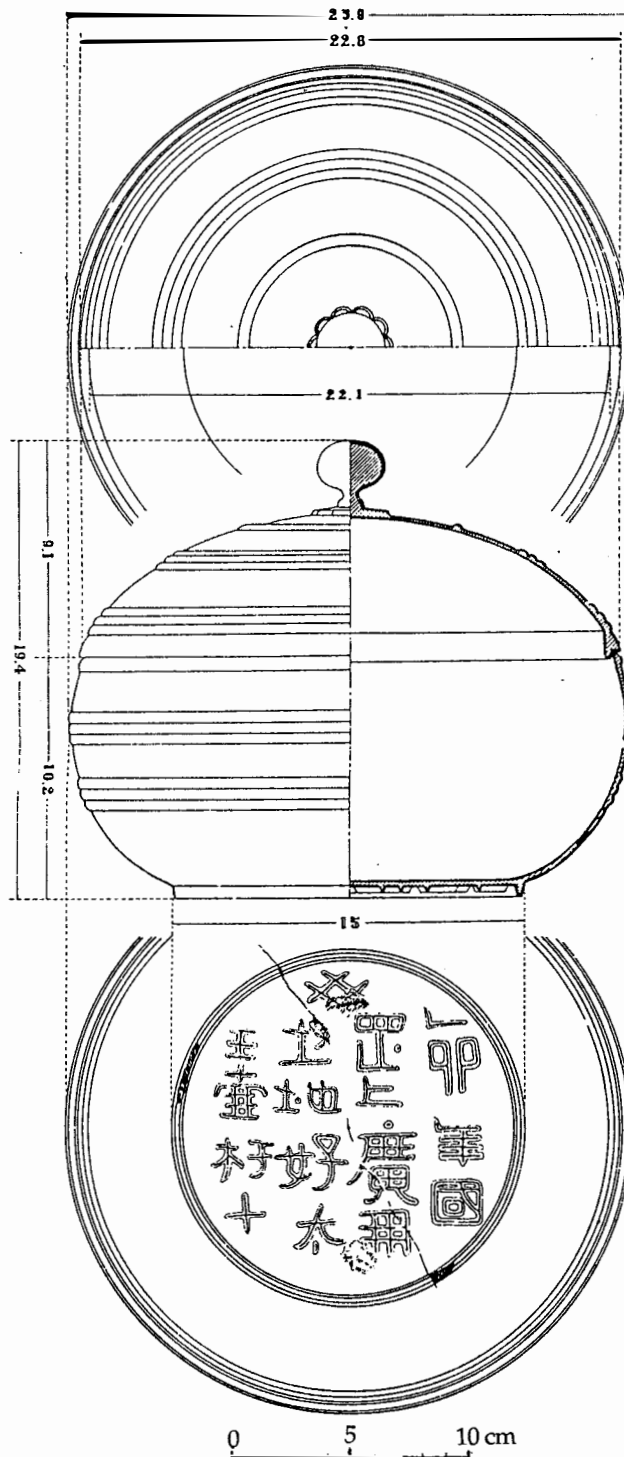


Figure 18. A bronze vessel discovered at Ho-U Chong, capital of the Silla Kingdom (see the Chinese characters inscribed on the bottom of the inside of the vessel) (after Kim 1948:xx).

from its manufacture to its deposition. In terms of the concept of transformational processes generated by Schiffer (1972, 1976:27-41), it is hard to determine when the transition from systemic context to archaeological context occurred (Schiffer 1976). The depositional uncertainty has resulted in speculative dates as late as the sixth century A.D., based on the type of pottery associated with the burial (Choi, B. H. 1981:185-186; Kim, W. Y. 1986:215). Using inscribed dates, the margin of error range can be as much as two cycles (i.e., 415+120). Obviously if artifacts are recovered with absolute dates inscribed, historical and archaeological contexts should simultaneously be taken into consideration before the final chronology is stated.

Despite the methodological problems, many Silla archaeologists feel confident about chronologies solely established by artifact typologies associated with ceramic typologies and the physical character of Silla tombs (e.g., the *Juksuk Mokgwak Bun*-Stone Compiled Wooden Chamber) in Gyungju. They assume that the lapse of time is well reflected in stylistic changes of pottery or burial structure. However, an important thing that should be kept in mind is that stylistic changes in artifact form and archaeological features do occur with variance in function, social groups, and ceramic production areas even in the contemporary society (Pearson 1985:182). Some variables in artifact morphology may not be time sensitive and thus may be regarded as chronologically insignificant.

This rather idiosyncratic archaeological environment in terms of being heavily concerned with establishing culture historical chronological sequences has created an undesirable tradition for both Silla and Korean archaeology. In the past, almost all Korean archaeologists put the chronology

in the conclusions of archaeological excavation reports, because the development of adequate chronologies for specific sites was one of the biggest concerns of their archaeological research. The tendency to put chronologies of sites in the conclusion part, however, has gradually changed. Recently, many Korean archaeologists have deliberately avoided proposing any chronological frameworks for archaeological sites which they have excavated; or they carefully suggest only relative chronologies for archaeological features. They are sensitive to criticism in terms of a chronology based on either archaeological features, artifacts alone, or combinations of both. They simply report what features were excavated, along with artifact descriptions, with little archaeological or historical interpretation. This overly cautious research attitude should be discarded as soon as possible for the development of Silla archaeology and ultimately Korean archaeology in general.

The chronology of Silla archaeology remains one of the most sensitive issues for Korean archaeologists. Obviously, there is a critical problem, not only with basic chronology but also with the research design and basic objectives of Silla archaeology. It should be pointed out that archaeologists not only have to establish the chronologies as stepping stones but they should go above and beyond the specifics of chronologies to delineate the cultural characteristics of the Silla Kingdom in its entire context.

There is no doubt that utilizing artifact typology to establish the basic chronology of Silla and Korean archaeology is a fundamental archaeological procedure, but equally important is the acquisition of independent chronometric dating to establish sound chronology (Choi, S. R. 1982, 1989; Kang et al. 1993; Nelson 1982; Pearson 1985). Barnes (1983), especially, argues:

With such different materials occupying such different roles in society, it is essential to have firm datings of the objects in absolute, not just relative, terms....It is often argued that radiocarbon datings are much too expensive to obtain as a matter of course. But when one considers the cost of the work hours needed to develop a chronology in the absence of absolute datings, surely the latter is much more expensive. A few well-placed carbon dated could save years of data shuffling and dissension over chronology [1983:49].

To partly resolve the dissension of the chronology of Silla archaeology, it is desirable to use radiocarbon dating techniques more rigorously, even if it does have some drawbacks for protohistoric Korean archaeology. Establishment of chronological frameworks should not be treated as an end in itself, but rather as a starting point to investigate further anthropological questions such as past human behavior, sociopolitical systems, and factors responsible for culture change, as has been suggested and practiced by processual archaeologists (cf. Binford 1968:5-32).

As a result of the absence of a convincing chronology based on chronometric dating techniques, disagreements continue concerning Silla archaeology. A discrepancy of approximately 100 years exists among Korean archaeologists as well as between Korean and Japanese archaeologists. The development of Silla pottery (Kim, W. Y. 1981:33-34) and the emergence of the *Juksuk Mokgwak Bun* (Stone Compiled Wooden Chamber) have been the main topic of debate. Korean and Japanese archaeologists have argued that the *Juksuk Mokgwak Bun* first appeared either at the beginning of the third century (Kim, K. W. 1970, cited in Choi, B. H. 1992:352), at the end of the third century (Yun 1974:102-104), at the beginning of the fourth century (Choi, B. H. 1981:203, 1992:354-359; Kim, C. H. 1987, 1991:80), at the middle of the

fourth century (Kim, W. Y. 1981:33-34), and at the beginning of the fifth century A.D. (Anazawa 1972, cited in Pearson 1985; Fujii 1979, 1980; Choi, J. G. 1983:2, 14; Jung and Shin 1983:169-172; Shin 1985:92-94).

Fortunately, however, there is general consensus on relative chronologies for the overall archaeology of the Silla Kingdom. For the purpose of this dissertation, I follow the chronology delineated by the Korean archaeologists who have excavated burials in the territory of the Silla Kingdom and its proximate areas. Specifically, this research follows the chronology of the appearance of *Juksuk Mokgwak Bun* at the beginning of the fourth century A.D. The appearance of *Juksuk Mokgwak Bun* appears to be closely related to the emergence of a strongly centralized government in the study area, based on archaeological evidence. This complies with the general historical context during the second half of the fourth century, especially the achievements of the King Naemul (351-402 A.D.) of the Silla Kingdom (see Chapter VII).

Archaeological Data Utilized to Investigate Warfare

For the investigation of the role of warfare in the formation of the Silla Kingdom, the most appropriate and legitimate archaeological data to use are artifacts or features which directly or indirectly reflect violent human behaviors and activities. Archaeologists have attempted to infer frequent intercommunity conflicts on the basis of indirect evidence such as changes in settlement patterns, (e.g., site locations, village nucleations, or abandonment of sites), or artifact styles, (e.g., abrupt appearance of foreign characteristics in local culture sequences) (Aikens and Higuchi 1982:217-218, 244; Haas 1990:186;

Sabloff and Willey 1967). These data carry information regarding violent human activities and increase in the intensity of warfare. However, the most direct archaeological approach is analysis of offensive and defensive weapons and facilities such as fortresses, garrisons, or ditches (Champion 1982:64-65; Webster 1976:6-7). In addition human skeletal remains, and residential and cemetery areas on which systematic violent behaviors are reflected, such as burned houses and destroyed burials, and their change through time, also provide a more convincing empirical interpretation of the presence of warfare (Webster 1976:6-7). Therefore, weaponry artifacts excavated mainly from graves in the Silla area and its adjacent area are incorporated into this research as the primary data base.

During the last three decades, most, if not all, Korean archaeological data have been recovered from burials in the territory of the Silla Kingdom and its adjacent area. Although some archaeological excavations in Silla, and in Korea, in general have been poorly conducted (c.f., Pearson 1985), the majority of excavation reports utilized in this research came from orderly excavations conducted during the 1980s and 1990s (Table 19, Figure 19). Those archaeological projects were well organized and systematically conducted by academic institutions. The excavated materials have been well documented in the archaeological reports.

Since many independent polities, especially including Gaya, interacted with Silla in the course of their sociopolitical development, it is important to incorporate their archaeological data into this research. Some formerly independent polities became part of the Silla territory from the second

Table 19. Archaeological Sites Utilized in this Dissertation.

No.	Site Location	Date	No. of Burials	Reference
1	Gujungdong, Gyungju	B.C. 2-1 A.D.	1	Choi, B. H. 1992:40
2	Ibsilri, Gyungju	B.C. 2-B.C. 1	1	Choi, B. H. 1992:39
3	Jukdongri, Gyungju	B.C. 2-B.C. 1	1	Choi, B. H. 1992:41
4	Pyungri, Gyungju	B.C. 2-B.C. 1	1	Choi, B. H. 1992:40-41
5	Euheundong, Youngchun	B.C. 1-1 A.D.	1	Youn 1987:153-158
6	Joyangdong, Gyungju	B.C. 1-3 A.D.	3	Choi, J. G. 1979a, b, 1981, 1982, 1983
7	Dahori, Euichang	B.C. 1-1 A.D.	28	Yi et al. 1989, 1991
8	Manchondong, Daegu	1-2 A.D.	1	Youn 1987:173-180
9	Yangdongri, Gimhae	1-3 A.D.	26	Research Institute for Antiquities 1989
10	Dogyedong, Changwon	1-5 A.D.	15	Park and Choo 1987
11	Nopodong, Busan	2-3 A.D.	27	Yun 1986
12	Paldal, Daegu	2-4 A.D.	21	Yun 1993
13	Juhpori, Habchun	2-6 A.D.	51	Jung et al. 1987
14	Hwangsungdong, Gyungju	3 A.D.	1	Yi and Kim 1985
15	Inwangdong, Gyungju	3-5 A.D.	14	Om and Hwang 1974
16	Hwangnamdong, Gyungju	3-6 A.D.	51	Lee, E. C. 1975, 1980; Yun 1975; Kim and Jung 1975; Kim et al. 1980
17	Jungraedong, Gyungju	4 A.D.	3	Choi, J. G. 1983
18	Daeri, Euisung	4-5 A.D.	2	Kim, K. W. 1968
19	Hyundong, Masan	4-5 A.D.	32	Lee and Kim 1990
20	Imdangdong, Gyungju	4-5 A.D.	34	Kwon et al. 1991
21	Jangrimdong, Euisung	4-5 A.D.	13	Yun 1981
22	Jisansong, Goryung	4-5 A.D.	26	Goryung County 1979
23	Jotabdong, Andong	4-5 A.D.	6	Chin 1975
24	Wolsungro, Gyungju	4-5 A.D.	52	National Gyungju Museum et al. 1990
25	Yeanri, Gimhae	4-6 A.D.	46	Busan University Museum 1993
26	Bokchundong, Busan	5 A.D.	7	Jung and Shin 1983, 1990; Busan City Museum 1992
Total			464	

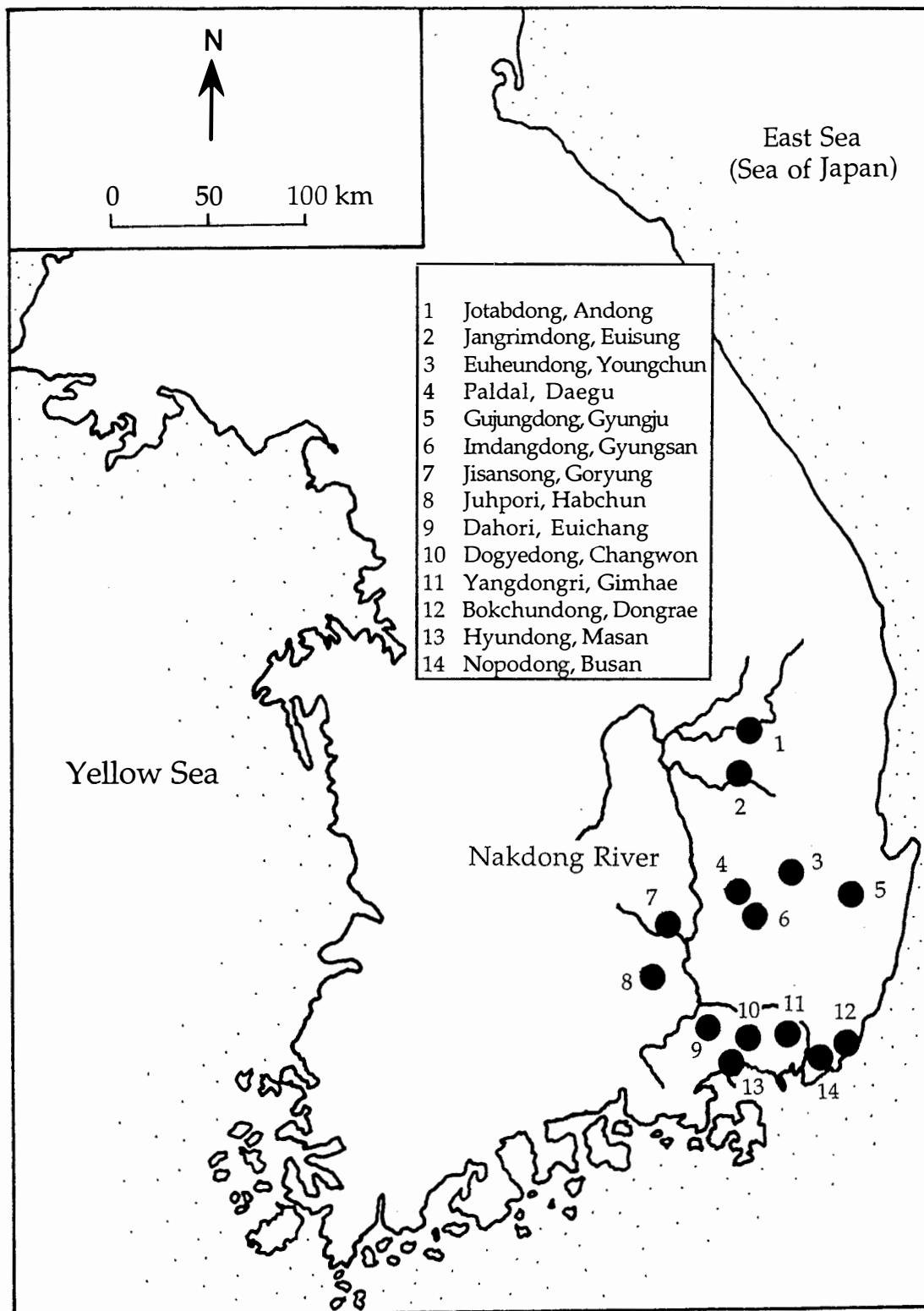


Figure 19. Locations of Archaeological site referred to in dissertation.

century A.D. (see Chapter VII). The examination of weaponry artifacts discovered outside Silla territory helps to assess the importance of sociopolitical interaction between the Silla Kingdom and its counterparts, particularly because the decline of the neighboring polities of the Silla Kingdom is directly associated with the development of the Silla Kingdom. The distribution of various kinds of bronze and iron weapons may also indicate that warfare was a regional phenomenon.

For example, there was considerable conflict not only between the Silla Kingdom and its neighboring polities but also between small independent polities themselves. It seems highly likely that military conflict was not an ephemeral but a long-term phenomenon until the advent of a strongly centralized government (i.e., the Silla Kingdom) emerged.

Brief Descriptions of Burials

A total of 464 burials from 26 archaeological sites in the southern portion of the Korean peninsula were studied for this dissertation (see Table 19, Figure 19, and Appendix B). To avoid sampling bias, a few excessively large tumuli of the royal families of the Silla Kingdom are not included. In this section, general information concerning burials will be briefly presented. A detailed examination of mortuary practices will be discussed later in this chapter in association with the identification of state level society.

Determination of the Chronology

No archaeological excavation reports utilized in the research have any radiocarbon data. Most researchers derived their chronologies from the

presence of types of tomb (240 cases, 51.7 %), pottery (159 cases, 34.3 %), stratigraphy with tomb style (34 cases, 7.3 %), bronze mirrors (eight cases, 1.7 %), Chinese coins (one case, 0.2 %), and unknown (22 cases, 4.7 %) out of a total 464 cases. In most cases, the chronologies suggested by the Korean archaeologists who conducted the specific archaeological excavations are adopted.

Burial Condition

Many burials (264 out of 464 burials, 56.9%) were damaged by both cultural and natural transformation processes such as roots, erosion, looting, agricultural practices, and road construction. For instance, 80 burials (17.2%) were looted, and 28 burials (6.03%) were partially excavated because they were located underneath modern architectural structures such as houses or asphalt roads. There were only 86 intact burials (18.5%). Virtually none of the graves had mounds left on the surface by the time archaeological investigation began. The depths of pits or chambers were also heavily influenced by both natural and cultural transformation processes. Therefore, much of the dimensional information of the graves is missing. The lack of data on mound size and the depth of pits and chambers makes it difficult to investigate the energy expenditure in the construction of burials. Despite the limited archaeological data, descriptive statistics on burial dimensions provides important information on mortuary variability in Silla archaeology.

Burial Types

A few types and subtypes of burial have been identified in the study area. Examination of detailed characteristics of each burial type is omitted, since it is not relevant to this research. Yet, it should be noted that general classification of morphological characteristics of the burials in association with certain types of artifacts provides critical information concerning chronology. For instance, as mentioned above, the appearance of *Juksuk Mokgwak Bun* provides an important guideline for the chronology of the Silla archaeology. As is usual, the burial type greatly changed through time and varied from one geographic area to another. The most important burial types relevant to dissertation, which were occurring in the study area from the second century B.C. to the sixth century A.D., are listed in Table 20.

One burial type consists of multiple burials under a huge earth mound. There are several different interpretations of the presence of multiburials in one mound. Some scholars interpret these multiple burials as reflecting used family tombs for either a contemporaneous group (Kim, K. W. 1970, 1976a:24-42; Park, J. W. 1964, cited in Choi, B. H. 1992:320) or over a long period of time by probably one kin group (Choi, B. H. 1992:320-323). Other scholars interpret them as a type of sacrificial burial, based upon contemporaneity of the tomb construction (Goryung County 1979:105-107, 277-278). Since a detailed study of the nature of multiburial chambers under one earthmound is not the present research concern, each burial found in multiburials in one mound is treated as an independent case in this research.

Table 20. Burial Types and Their Frequencies Utilized in the Mortuary Analyses.

Burial Type	Frequency	Percentage
Pit Burial	48	10.3
Pit Burial with Wooden Coffin	89	19.2
Pit Burial with Wooden Chamber	79	17.0
Stone Lined Tomb	79	17.0
Jar Coffin	28	6.0
Stone Compiled Wooden Coffin	10	2.2
Stone Compiled Wooden Chamber	50	10.8
Stone Lined Chamber Tomb	29	6.3
Unidentified	52	11.2
Total	464	100 %

Another burial type consists of unusually large tombs where a subordinate chamber is attached to the main tomb chamber. The subordinate chamber was generally designed for the deposition of sumptuous mortuary offerings, including human sacrificials. Artifacts recovered from both main tomb chambers and subordinate tomb chambers were combined together and treated as one burial unit. However, when the size of subordinate chamber is excessively large (12 m² - 26 m²), the two features of the main chamber and subordinate are treated independently for analytical purposes. Thus, artifacts recovered from both main chambers and subordinate chambers were counted separately (a total of four cases).

Burial Orientation

In general, burial orientation is determined by the location of the skull, for example, when a skull points the east (i.e., A skull is located at the east end of a rectangular grave), the burial is classified as east. The burial orientation is often problematic, because skeletal remains are not well preserved, due to acidic soil conditions. In order to resolve this problem, the long axis of the burial was observed assuming an extended position (e.g., east-west or northeast-southwest, etc.). Thus, out of total 464 burials, the long-axis of all burials are: east-west 191 cases (41.2%), north-south 80 cases (17.2%), northeast-southwest 71 cases (15.3%), northwest-southeast 63 cases (13.6%), and unidentified, 59 cases (12.7%). How the orientation of long-axis changed through time is not examined here, but many of the burials seems to have been placed east-west in the study area during the time period of the second century B.C. until approximately the end of the fifth century A.D.

Preservation of Skeletal Remains

Acidic soil conditions are consistently blamed for poor skeletal preservation in Korean archaeology. The majority of the burials (374, 80.6%) did not yield any skeletal remains, while 90 burials (19.4%) yielded skeletal remains, which is surprising and thought-provoking. This is an unexpectedly large sample, and since discovery of skeletal remains in Korea is highly expected, Korean archaeologists should pay a close attention to the study of bioarchaeology. In a few cases, sex and age of the skeletal remains were determined; there were 18 females (4.1%) and 11 males (2.6%), with 58 cases indeterminate; five (1.1%) children (age 1-12), zero adolescent (age 12-

20), 14 (3.0%) young adults (age 20-35), 15 (3.2%) of middle adult (age 35-50), and two old adults (age older than 50), with 51 cases unknown. Due to both poor bone preservation and lack of adequate attention to skeletal remains, the cause of death is unknown for most cases. The cause of death (e.g., whether some people were killed in battles) cannot be determined by using these excavated skeletal remains. Burial treatment in terms of the placement of body through time looks relatively consistent (articulated with extended position in most cases).

With this minimal information and insufficient sample size, reconstruction of the appropriate population composition such as sex ratios, infant mortality and life expectancy, is difficult to determine and is not attempted here.

Description of Artifacts and Problems with Their Functional Typology

To analyze the relevant artifacts in conjunction with warfare and to reconstruct the level of social complexity by utilizing artifacts and dimensions of burials, a total of 56 variables were created and recorded in the computer (Appendix B). A wide variety of artifact categories were identified, yet not all these artifacts are included in the analysis, since they are beyond the scope of this research. Pottery is the most common type of grave goods in the study area; eighty-six percent of the sample (398 out of 464 burials) yielded at least one pot (minimum 0, maximum 190, mean 12.9, standard deviation 24.0). Recovered artifacts not included in the analysis are groundstone, stone bracelets, whetstones, lacquer, bows and arrows, wooden vessels, wooden quivers, wooden fans, bone arrowheads, clay balls, shell ornaments, and net

sinkers. The material types of artifacts identified are jade, glass, bronze, iron, silver, and gold. Imported items were also discovered in the study area, and luxurious goods will be discussed later in the light of the role of long-distance exchange for the sociopolitical evolution of the Silla Kingdom.

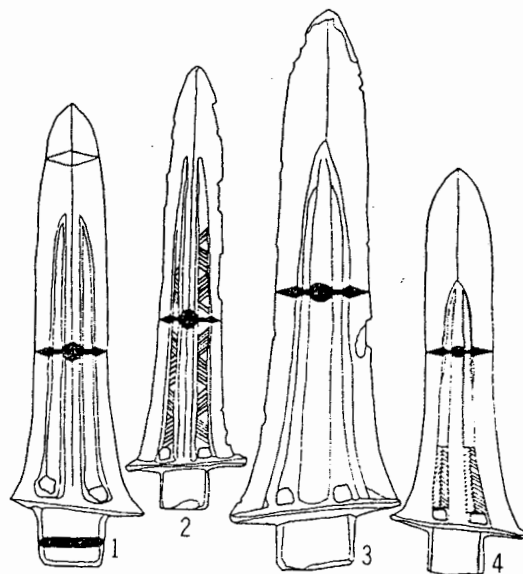
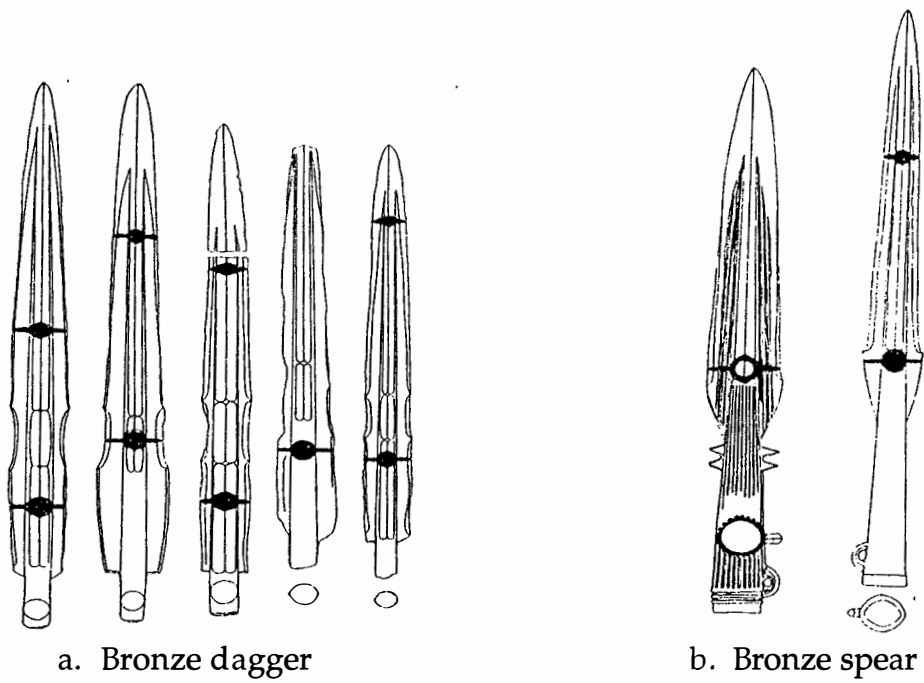
Bronze and iron utilitarian/ceremonial and weaponry artifacts are the primary objects of this research. All artifacts made of either bronze or iron were separated into two different categories: utilitarian/ceremonial items and weapons. Judging from context there seems to be a clear functional distinction between the two categories. For instance, since much archaeological and historical evidence indicates that agriculture was commonly practiced by the inhabitants of the southern portion of the Korean peninsula during the time period of interest (see Chapter VI and VII), most of the utilitarian tools may be considered agricultural implements.

On the other hand, the majority of weaponry-type artifacts, such as arrowheads, spearheads, axes, sabers, and swords associated with warfare as recorded in the historical documents, and remains of fortifications over the landscape are assumed to have been used for battles rather than hunting. Some of those weapons may have been used for hunting as well, but hunting activities were probably related to recreation or leisure rather than to subsistence activities, because agricultural practice was common at that time. Besides, most, if not all, of the weapons were apparently manufactured not for mortuary offerings but for military purposes. Many excavators observed that decayed organic residues of hafts, shafts, and handles made of wood, or rope used to bind them, still remained on many excavated iron weapons

(Busan University Museum 1993:87-121; Goryung County 1979:92; Lee and Kim 1990:157, 179).

Yet, the functional differences between utilitarian tools and weapons are not always definite and clear. O'Shea (1984:60), for example, noted that "...simply because an artifact was designed for a particular function does not mean that it was perceived or used in that way by members of different native groups." Many artifact categories such as arrowheads, knives, axes, and sickles, in the study area may have had multiple functions including hunting, butchering, cooking, harvesting, woodworking, or even ceremonial purposes. Functional interpretation of artifact types need to be resolved before further analysis is conducted. Taking into consideration the problems with determination of the function of the metal artifacts, relevant individual weaponry artifacts are briefly described in association with possible variations of usage.

Bronze daggers are short cutting and stabbing weapons, usually double-edged, set in an attached hilt made of wood or bronze (Figure 20-a). Bronze spearheads are thrusting blades mounted on long shafts as weapons for battle (Figure 20-b). Bronze halberds are weapons in which pointed blades are mounted at right angles to the shafts (Figure 20-c). The main functions of the three types of bronze artifacts were as weapons for war. There is also, however, the possibility that they may have been used as symbols of authority or as the paraphernalia of shamans during pre-state level societies (e.g., chiefdoms). Yet, the three types of artifacts are exclusively treated as weapons for war in this research, because they are assumed to have been used at battles



0 5cm

c. Bronze halberd

Figure 20. Bronze weapons discovered in the study area (after Youn 1987:102, 147).

from the first century B.C. onward in military conflicts known according to historical documents.

Iron knives are mainly cutting or stabbing instruments with a sharp blade, usually single-edged, set in a handle (Figure 21). Knives have been classified as utilitarian tools by the majority of Korean archaeologists (Busan University Museum 1990; Kim, K. W. 1976:14; Yun et al. 1993:83). Iron knives have significant problems in terms of functional typology, because iron knives, unlike daggers, sabers, or swords, have multiple possible functions such as food processing, expedient tools, and weaponry. It is necessary to take into consideration their inherent function based upon their stylistic variation. A few scholars, based on ethnographic data, have argued that knives have universally been used as one of the most efficient weapons (Clunie 1977:58; Kim, K. W. 1976:3; Laffont 1966:298). Knives are a very convenient and efficient instrument for close combat such as hand-to-hand fighting.

The basic descriptive statistics for iron knives incorporated in this research are as follows (n=40): length—minimum 5.1 cm, maximum 25.1 cm, mean 12.2 cm, standard deviation 4.4 cm, standard error 0.7 cm; width—minimum 0.9 cm, maximum 3.8 cm, mean 1.65 cm, standard deviation 0.47 cm, standard error 0.075 cm.

Since a significant number of iron knives (total 300) were discovered in the study area, the determination of the function of the iron knives is critical for the outcome of this research. Therefore, in order to resolve the problem of multiple functions for iron knives, two different analyses will be conducted: first, with knives treated as weapons then, and secondly with

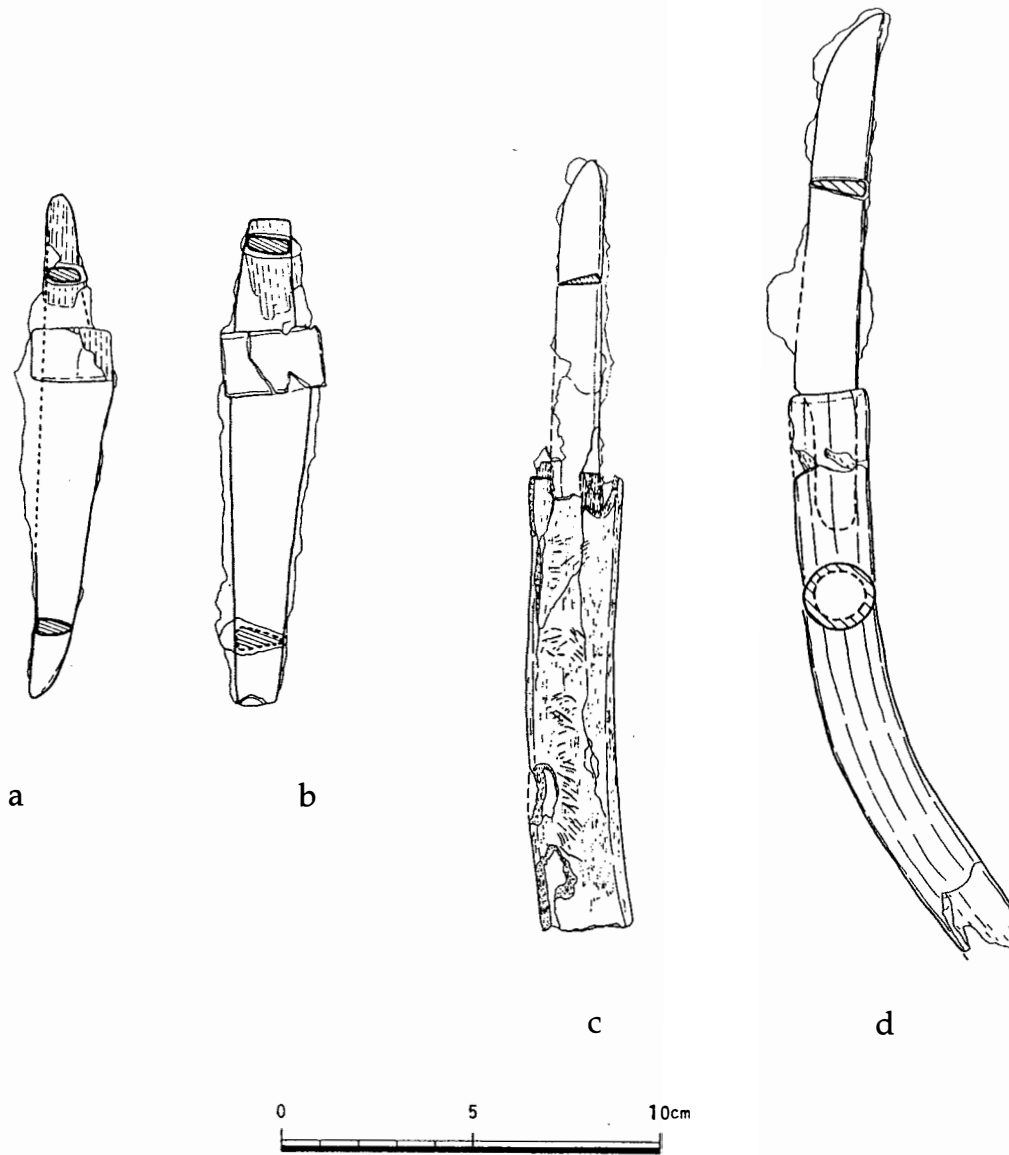


Figure 21. Iron knives discovered in the study area (a and b, after Gyungju National Museum et al. 1990:342; c and d, after Busan University Museum 1993:89, 183).

knives considered as utilitarian tools. Comparisons will be made to examine if there is any change in terms of the proportions of weapon and utilitarian tool, and how the means of the two categories changed through time (see below).

Axes are a flat and heavy cutting tool in which the cutting edge is parallel to the haft (shafted-hole axe). There are many different types of axes ethnohistorically and archaeologically known. In the study area, the majority of axes consist of socketed- and winged-axes with at least two more different subtypes (Figure 22). For these socketed and winged axes, wooden handles, which are either straight or of which the ends are hooked, were inserted into the wing or the socket of iron axes. Thus, the wooden handles and axes make either straight or right angles.

Axes also have been treated as a utilitarian tool by the majority of Korean archaeologists (Yi et al. 1989:20; Yun et al. 1993:83). The main function of the axes was for woodworking but they could have also functioned as weapons of war (Bray and Tramp 1978:29; Kim, K. W. 1976:16; Milisauskas 1978:177-179).

Historical and archaeological data indicate that iron axes discovered in the study area were undoubtedly used as weapons. According to a historical account in the *Samguk sagi*, an iron axe was used by a Baekje warrior to kill Nul Choi, a Silla military officer, during a war (Kim 1145:388). Further, mural paintings show warriors carrying shafted-hole axes on their shoulders. However, these mural paintings were discovered in the Goguryo Kingdom (Figure 23). The type of iron axe presented on the Goguryo mural paintings is of the shafted-hole axe variety, whereas the majority of axes discovered in the

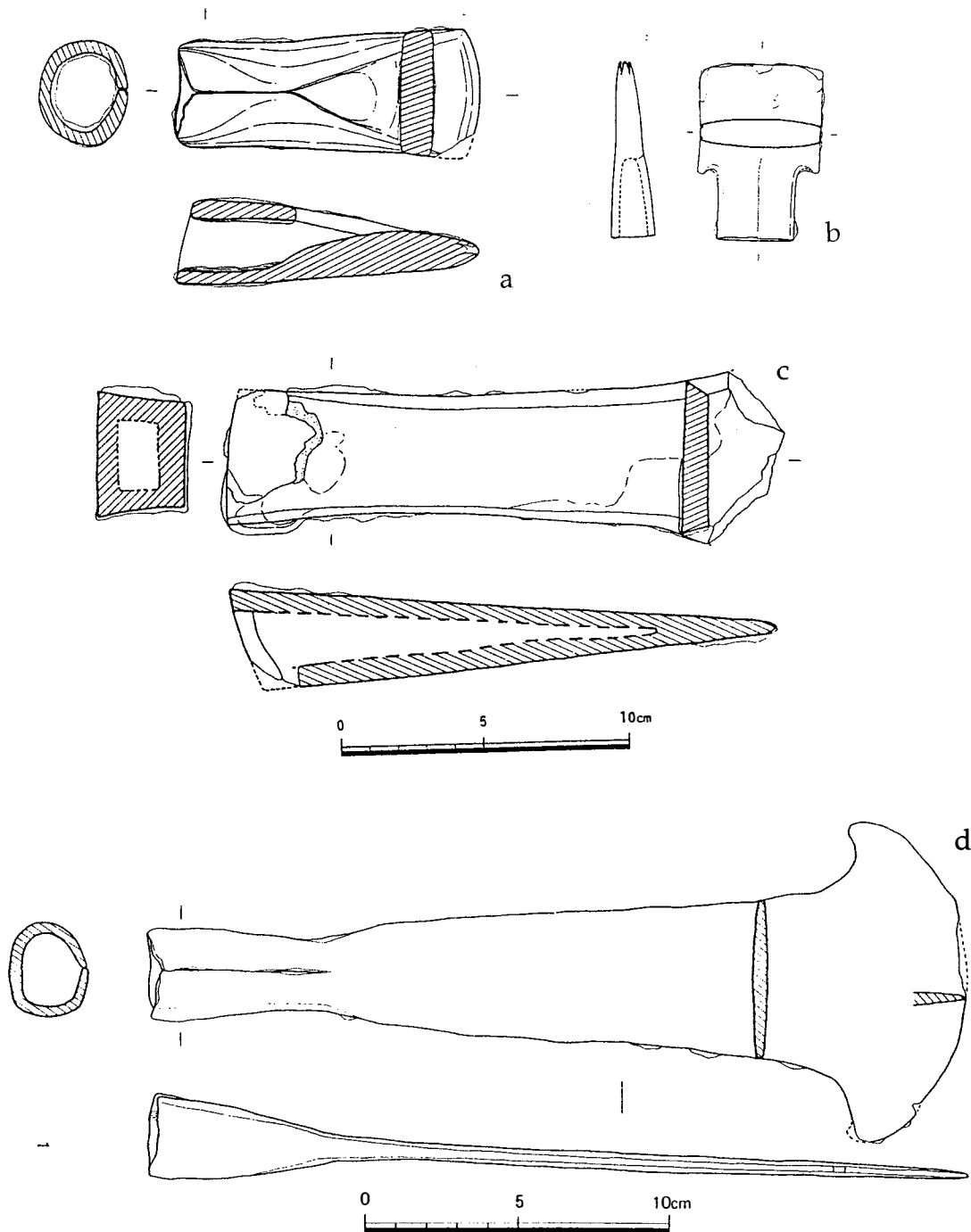
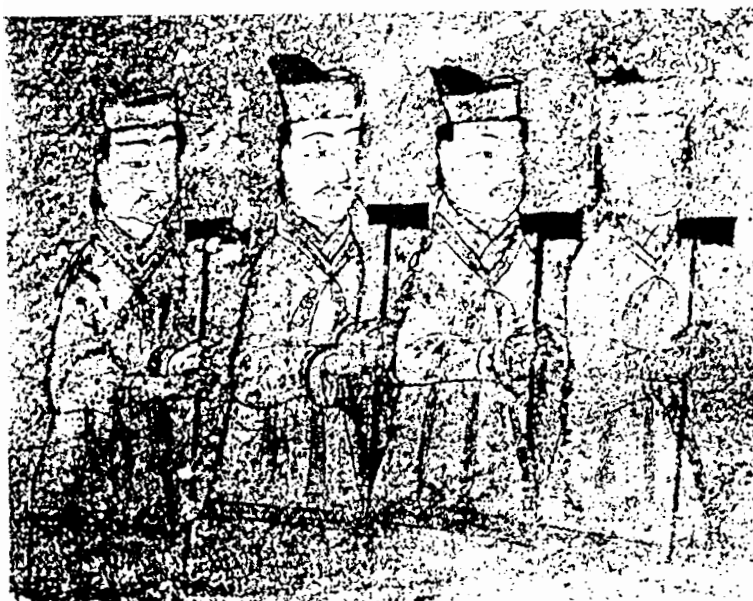
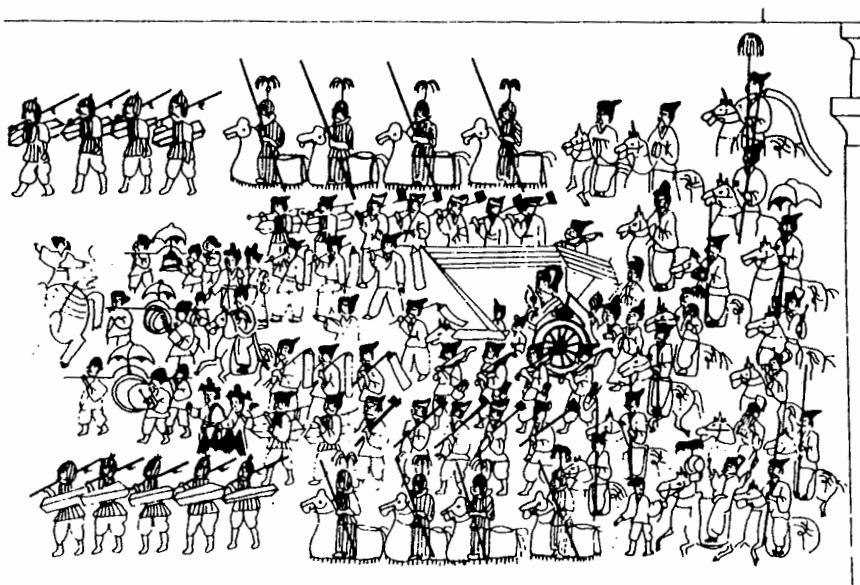


Figure 22. Different types of axes discovered in the study area (a-c, after Gyungju National Museum et al. 1990:138, 342; d, after Yun 1993:49).



a. Warriors of the Goguryeo Kingdom carrying iron axes, An-ak Tomb No. 3 (after Kim, K.W. 1982).



b. A portrait of Dong Su's, a high government official of the Goguryeo Kingdom (Many warriors carrying iron axes on their shoulders are seen, after Henthorn 1971:27).

Figure 23. Mural paintings of the Goguryeo Kingdom on which many iron shafted-hole axes are depicted.

study area consist of socketed and winged axes. Although there is a stylistic difference between axes depicted in the Goguryo mural paintings and ones discovered in the study area, it has been suggested that at least one or two types of axes must have been used as weapons (Kim, K. W. 1976:16-18).

In this sense, it is urgent to accurately classify all of the different types of axe discovered in the study area. I believe that the determination of the exact function of iron axes largely depends on the type of axe. A detailed classification of axes is not possible for this dissertation, because many Korean archaeologists merely provided the numbers of excavated iron axes without mentioning any consistent specific typological or functional considerations. Thus, for the purpose of this dissertation, the procedure of the data manipulation of iron axes will be the same as for iron knives (see above).

Arrowheads or projectile points are the most common and abundant type of weapon discovered in the study area. It is obvious that iron arrowheads were one of the most important offensive weapons. In the case of iron arrowheads, the function is relatively clear. It is not uncommon to see Goguryo Kingdom mural paintings on which warriors are using bows and arrows to hunt animals. Yet, as mentioned above, since agriculture was commonly practiced during the iron age, iron arrowhead must be regarded as primarily weapons, not hunting tools. Since a great number of arrowheads were used and discarded in battle, they must have been mass-produced, because unlike other weapons such as spears, knives, axes, or sabers, arrowheads are generally used only once, although occasionally they were collected after battles to be used again.

Iron arrowheads constitute the bulk of the weaponry artifacts found in the study area (42.3%, a total of 1074 arrowheads/a total of 2537 iron weapons, see below). Forty-five arrowheads made of bone were also recovered in the Yeanri site at Gimhae (see Table 19 No. 25, for the site location) and there is a strong possibility that they may have been used in battles as well. However, since they are not made of metal they are not included in the present data set to avoid a sampling bias.

At least three different types of iron arrowhead were identified (Figure 24). Since organic materials rarely survive in the archaeological record, it is hard to know exactly what kinds of materials were used for shafts (probably bush clover and bamboo, Kim, K. W. 1976:6). Some examples of arrowheads from Yangsan Bubuchong (Couple Tomb at Yangsan) still have the remains of the wooden shafts attached to their tangs (Kim, K. W. 1976:6). As can be seen in the figure, organic material remains on the tangs of iron arrowheads (see Figure 24). This strongly indicates that arrowheads were practically used at battles.

Iron spearheads were apparently designed and manufactured to function as a weapons of war. Most of them are socketed spearheads, but there are at least three different types (Figure 25). Two-hundred and thirty-five (9.3%) iron spearheads were discovered in the study area.

Iron sabers and swords usually used for both slashing and cutting were also discovered in the study area. Generally both sabers and swords are longer than knives and daggers. There is a similarity between knives and sabers and between daggers and swords in terms of the shape and the number of cutting edges. The average sizes of knives and daggers is smaller than those of sabers

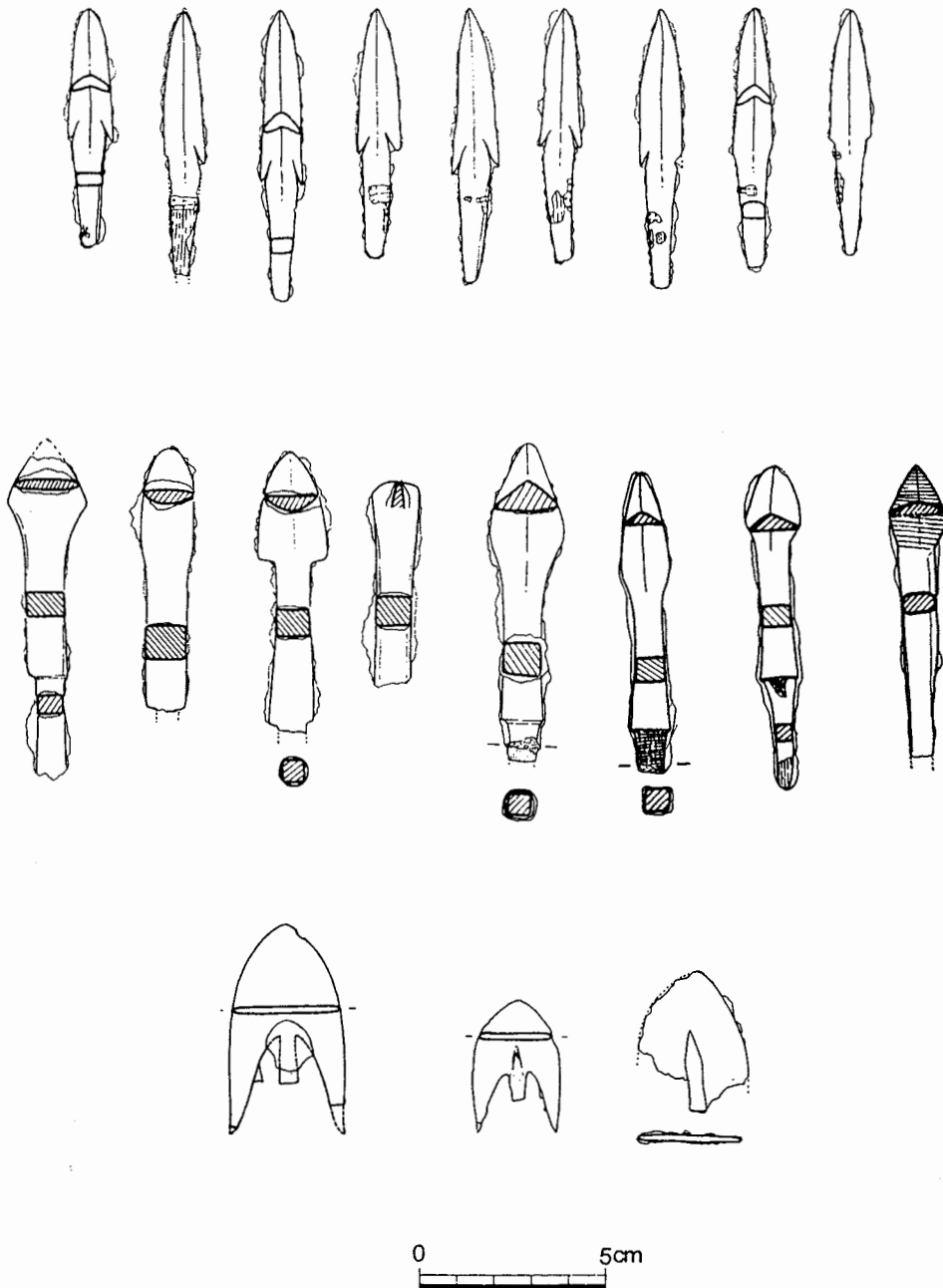


Figure 24. Iron arrowheads discovered in the study area (top row, after Busan University Museum 1993:212; middle and bottom rows, after Gyungju National Museum et al. 1990:46, 225).

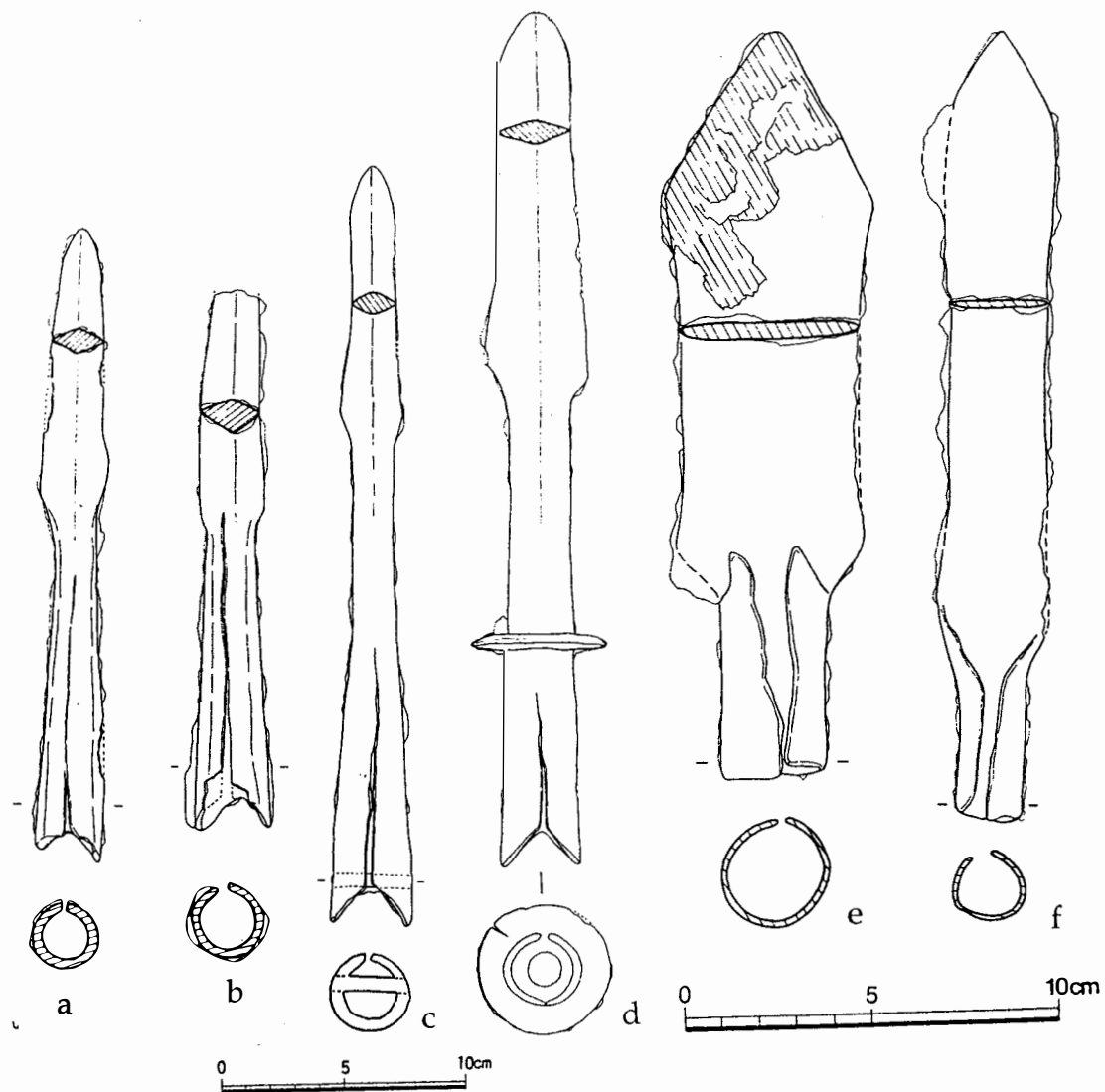


Figure 25. Iron spearheads discovered in the study area (a–d, after Gyungju National Museum et al. 1990:89, 158; e–f, after Busan University Museum 1993:183).

and swords. Knives and sabers have a single cutting-edge, whereas daggers and swords have a double cutting-edge. Thus, in oriental countries, the distinction between sabers and swords is usually based upon the number of cutting-edges. That is, a saber has a single cutting-edge (Figure 26, a-f), while a sword has a double cutting-edge (Figure 26, g). In the study area, only a few iron swords were discovered, from burials of an earlier time period, while sabers were the most common and abundant weapon throughout the Three Kingdoms period (Kim, K. W. 1976:13). Since only a few swords were excavated, all of them were included with sabers for the statistical analysis.

One unique weapon discovered in the study area is called Yuja E-gi by both Korean and Japanese archaeologists. This weapon consists of an iron plate with several hooks or barbs on it. The blade, socketed to the end of a pole, is of a rectangular shape with many semi-ellipse or semi-circular hooks, facing the opposite direction (Figure 27-a, b). This was probably used by foot soldiers to pull mounted men off horses (Kim, K. W. 1976:12-13). Although Yuja E-gi has been translated into English as "saw knife" (Research Institute of Korean Archaeology and Art History 1984:43), it may be more properly called 'barbed-knife' or 'hooked-knife' considering its evident represent the function.

A few different types of Yuja E-gi have been identified in southern Korea. One type, with concentric rings instead of barbs attached to the rectangular iron plate has been recovered (see Figure 27-c). In this case, the major function of the iron Yuja E-gi is hardly considered to be that of a weapon. Some Korean archaeologists have proposed that the artifact may have been used as a ceremonial instrument (Jung and Shin 1983:145; Park and

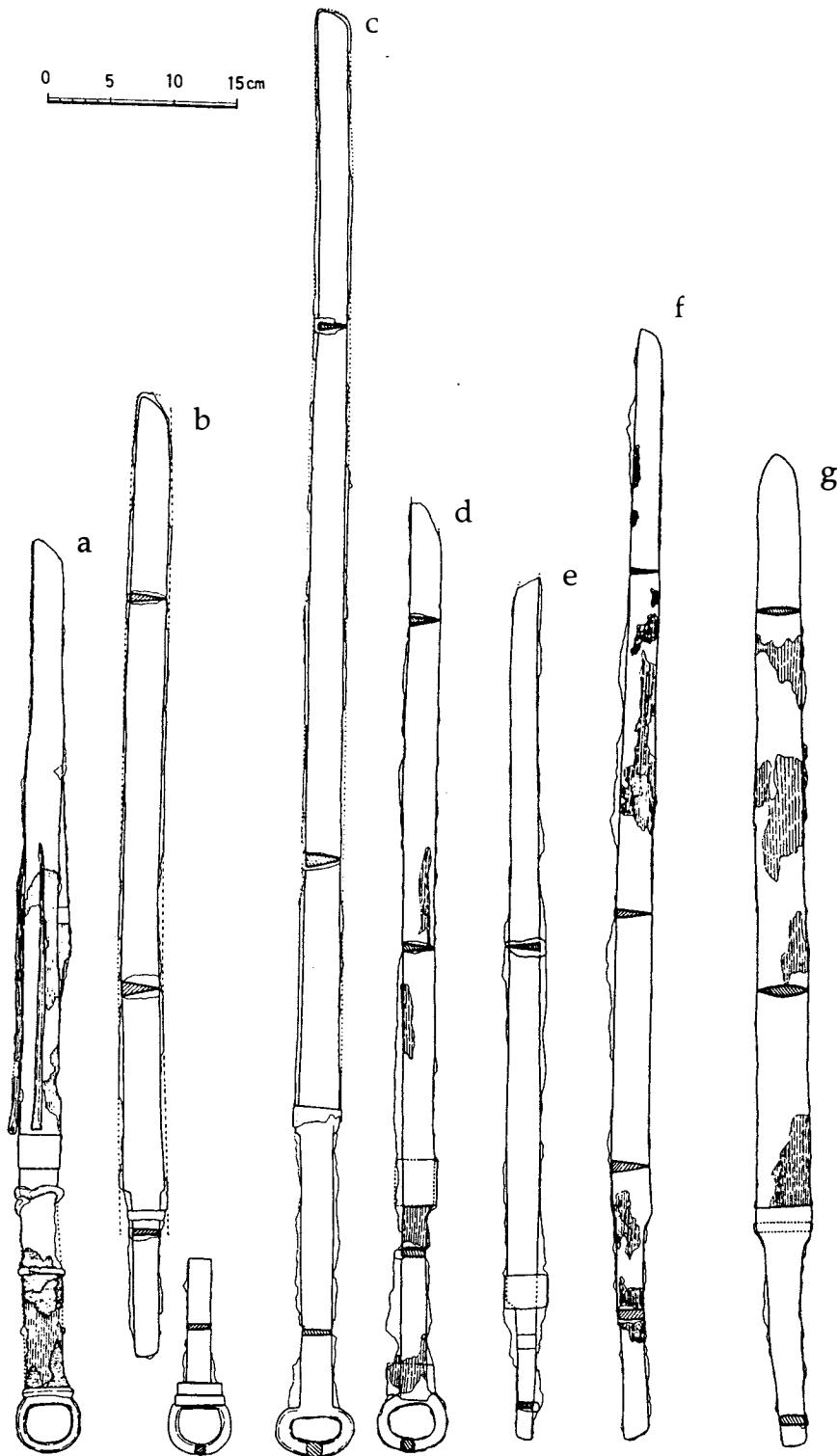


Figure 26. Iron sabers (a–f) and swords (g) discovered in the study area (after Gyungju National Museum et al. 1990:159).

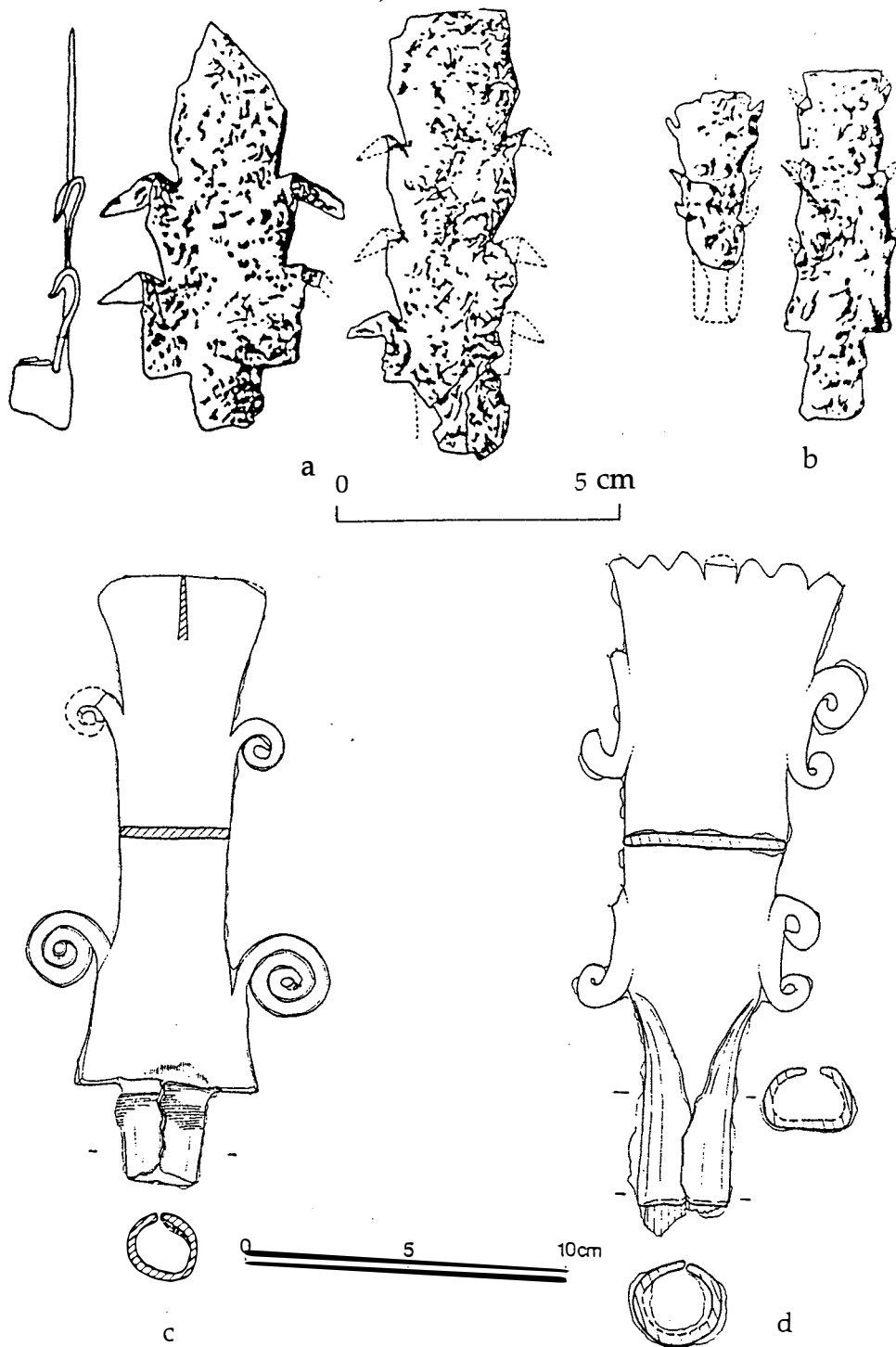


Figure 27. Yuja E-gi (Barbed- or hooked-knife) (a and b, after Kim, K. W. 1976:33; c, after Busan University Museum 1993:183; d, after Park and Choo 1987:135).

Choo 1987:196), or as a symbol of the elite at funerals (Busan University Museum 1990:96-97). Though further investigation concerning the artifact needs to be conducted, since not many subtypes of the hook-knife are identified, all artifacts of Yuja E-gi are classified as weapons for this research.

Many different kinds of horseriding equipment, including saddle ornaments, have been excavated (Figure 28). A complete set of horseriding equipment consists of a wide variety of element such as bits, stirrups, saddles, and a set of harness which includes iron junction fitments to connect many different straps (e.g., breast, shoulder, and haunch), and harness fittings with non-functional items such as pendants. Since the examination of individual artifact typology is not of primary concern for this research, and more importantly too many variables with too few artifact numbers obviously cause critical statistical problems, all horseriding equipment items were lumped together.

Assorted iron utilitarian tools identified in the study area include chisels, sickles, ingots, spades, pins, and nails/clamps. Iron artifacts with known functions were all placed in the utilitarian tool category. A total of 85 iron nails and clamps were eliminated to avoid any potential sampling bias. In addition, in a strict sense, these are not tools, and probably were used to assemble either wooden-coffins or wooden-chambers.

A considerable number of iron sickles (in 124 of 429 burials) were discovered in the study area (Figure 29). Sickles are generally considered to be harvesting tools (Busan University Museum 1990:97), though, K. W. Kim (1976:13) has suggested that sickles may have functioned as weapons as well. He argues that they may have been used by infantrymen to attack mounted

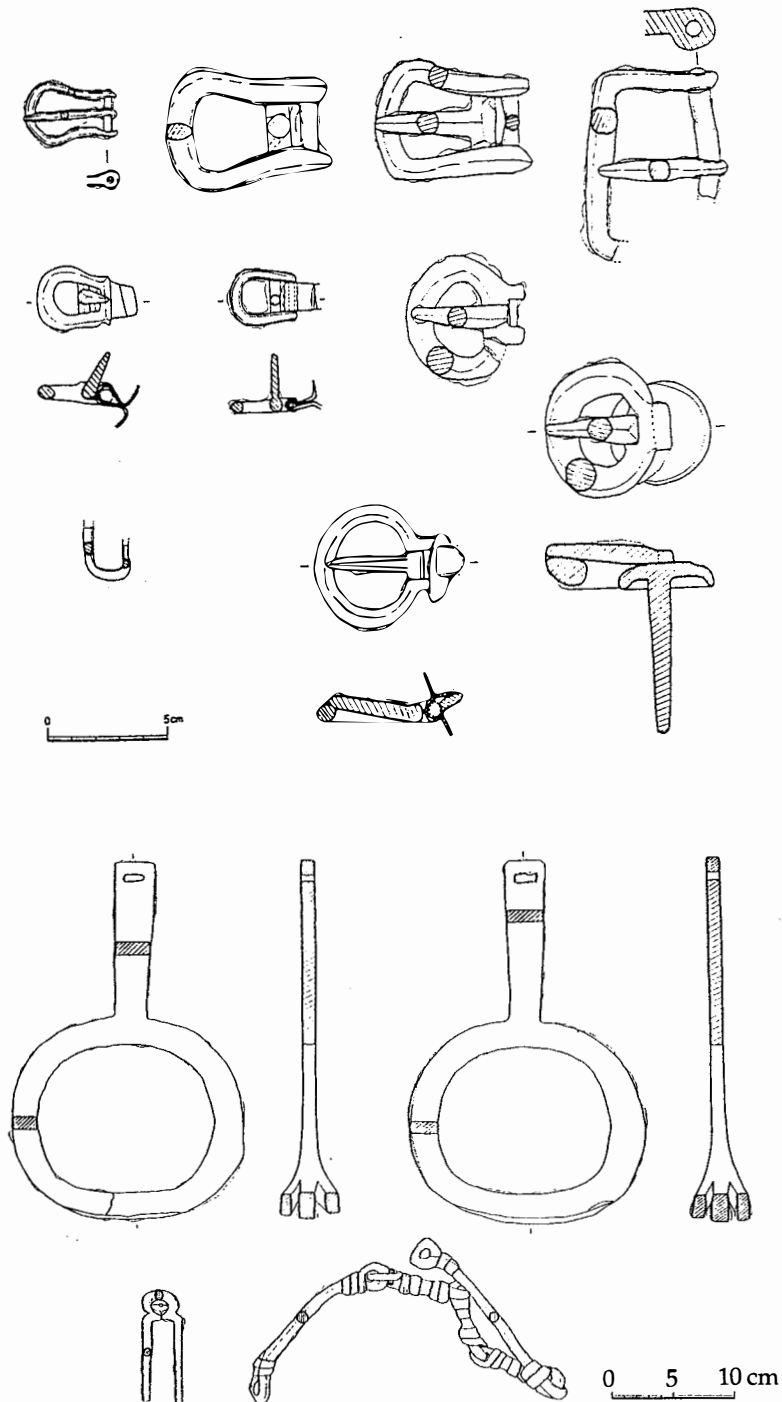


Figure 28. Iron horse-riding equipment discovered in the study area (after Gyungju National Museum et al. 1990:46, 50).

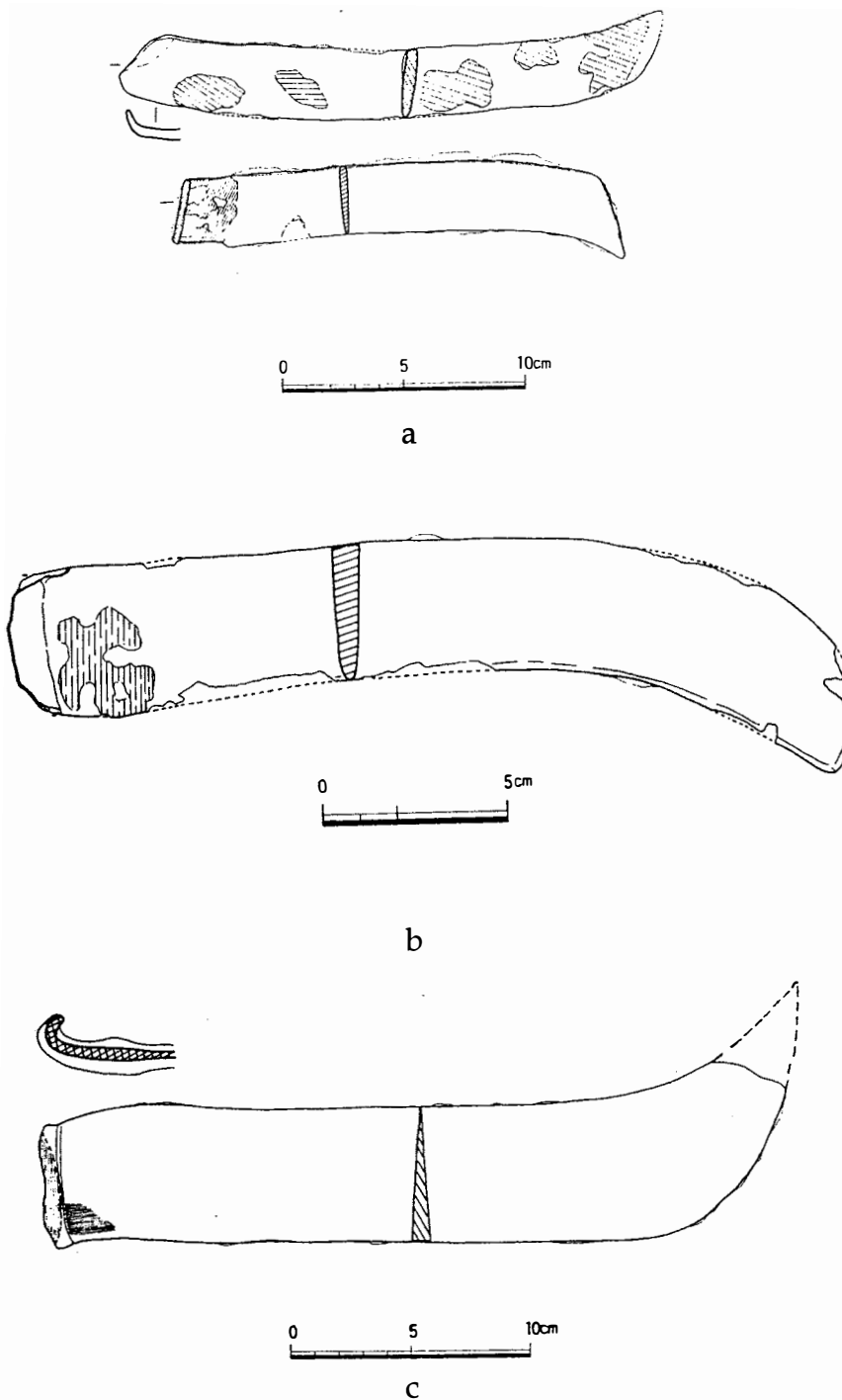


Figure 29. Iron sickles discovered in the study area (a–b, after Gyungju National Museum et al. 1990:48, 343; c, after Park and Choo 1987:135).

cavalrymen in wars during the Three Kingdoms period in Korea (Kim, K. W. 1976:13). Although there is a strong possibility that sickles may have been occasionally used as weapons, sickles are categorized as a utilitarian tool (i.e., harvesting tools) in this dissertation. Jung and Shin (1983:97) also made a similar argument about iron chisels, suggesting that iron chisels may have been used as a weapon for war. Yet, all iron chisels, here are classified in the utilitarian category. The artifact data used in the following statistical analysis are presented in Table 21 (see also Appendix B).

Archaeological Data Manipulation and Analyses

Taking into consideration the general trend towards increasing frequency of warfare from the first to seventh centuries A.D., as recorded in historical documents, it is expected that a corresponding increase in frequency of weaponry artifacts should occur through time. More importantly, it is expected that metal weaponry artifacts in graves should become more dominant than utilitarian tools. An increase in frequency and status of weaponry, in terms of the incidence of conflicts between the Silla Kingdom and its counterparts, would indicate a positive correlation between the archaeological records and the historical documents (i.e., the *Samguk sagi*). Finally, the warfare model would be framed as a positive factor for the explanation of state formation in the study area.

To investigate these research questions, the archaeological data summarized in table are analyzed (Table 21). The data come from a sample of 429 burials, 35 of which were excluded because they contained no chronological data. Some irrelevant artifacts and underrepresented samples

Table 21. Analytical Data Base of Utilitarian, Ceremonial, and Weaponry Artifacts, from the Study Area.

Function	Material Type	Artifact Type	1 C.A.D. (n=35)	2 C.A.D. (n=14)	3 C.A.D. (n=89)	4 C.A.D. (n=137)	5 C.A.D. (n=145)	6 C.A.D. (n=9 ^a)	Total (n=429 ^b)
Utilitarian/ Ceremonial	Bronze	Mirror	22	0	0	1	0	0	23
		Bell	14	0	0	0	8	1	23
		Ornament	140	0	0	3	7	1	151
		Unidentif.	32	0	0	1	3	0	36
		<i>Total</i>	<i>208</i>	<i>0</i>	<i>0</i>	<i>5</i>	<i>18</i>	<i>2</i>	<i>233</i>
	Iron	Chisel	3	2	2	8	9	1	25
		Sickle	5	5	16	47	47	4	124
		Ingot	0	0	0	52	159	0	211
		Uidenti.	9	1	6	52	104	0	172
		<i>Total</i>	<i>17</i>	<i>8</i>	<i>24</i>	<i>159</i>	<i>319</i>	<i>5</i>	<i>532</i>
	Subtotal	225	8	24	164	337	7	765	
Weapon	Bronze	Dagger	20	0	0	0	0	0	20
		Spearhead	18	0	0	0	0	0	18
		<i>Total</i>	<i>38</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>38</i>
	Iron	Arrowhead	10	33	145	412	474	0	1074
		Spearhead	14	10	30	104	76	1	235
		Axe	72	9	49	111	60	2	303
		Knife	3	5	44	94	151	3	300
		Saber	14	5	7	36	33	0	95
		Barbed knife	0	0	2	14	24	0	40
		Horsesriding gear	0	0	50	295	126	0	471
Armor	0	0	0	6	13	0	19		
	<i>Total</i>	<i>113</i>	<i>62</i>	<i>327</i>	<i>1072</i>	<i>957</i>	<i>6</i>	<i>2537</i>	
	Subtotal	151	62	327	1072	957	6	2575	
	Grand total	376	70	351	1236	1294	13	3340	

a Small sample size, collapsed into the fifth century A.D.

b Thirty-five burials of which chronology was unknown are excluded.

are also either eliminated or collapsed into larger categories. For example, a total of 20 artifacts out of five burials dated to the first century A.D. are combined with the samples of the first century B.C. Similarly, since the total sample size from the sixth century A.D. is too small ($n=9$) to make any legitimate inferences regarding mortuary behavior, the burials and artifacts are collapsed into those of the fifth century A.D.

After all data were screened and manipulated according to sample size, the entire data set was transformed into two different tables: one that classified axes and knives as weapons (Table 22), and another classifying them as utilitarian tools (see below). First, when axes and knives are incorporated into the weapon category, there is a significant difference in terms of frequency of total utilitarian tools versus weapons in the study area (see Table 22 and Figure 30). To examine how the two categories of artifacts changed through time, a frequency distribution consisting of utilitarian tools and weapons based on means derived from absolute frequency values within observations was put on a graph (Figure 31).

As can be seen in Figure 31, during the first century A.D. the mean number of utilitarian tools was greater than the number of weapons. In the second century A.D., however, the mean number of utilitarian tools abruptly decreased and remained less than that of weapons throughout the remaining time periods. The mean number of utilitarian tools increased slightly from earlier totals from the fourth century A.D. onward, but still remained smaller in relation to the mean distribution of weapons. The large percentage of utilitarian tools may have been biased by the number of miscellaneous

Table 22. Summary Table of Utilitarian and Weaponry Artifacts (Axes and Knives are Included as Weapons).

Date	No. of Burial (N)	Utilitarian Tools			Weapons		
		Mean	Ratio	Total	Mean	Ratio	Total
1 C.A.D.	35	225	6.43	59.8%	151	4.31	40.2%
2 C.A.D.	14	8	0.57	11.4%	62	4.43	88.6%
3 C.A.D.	89	24	0.27	6.84%	327	3.67	93.2%
4 C.A.D.	137	164	1.20	13.3%	1072	7.82	86.7%
5 C.A.D.	154	344	2.23	26.3%	963	6.25	73.7%
Total	429	765	1.78	22.9%	2575	6.0	77.1%

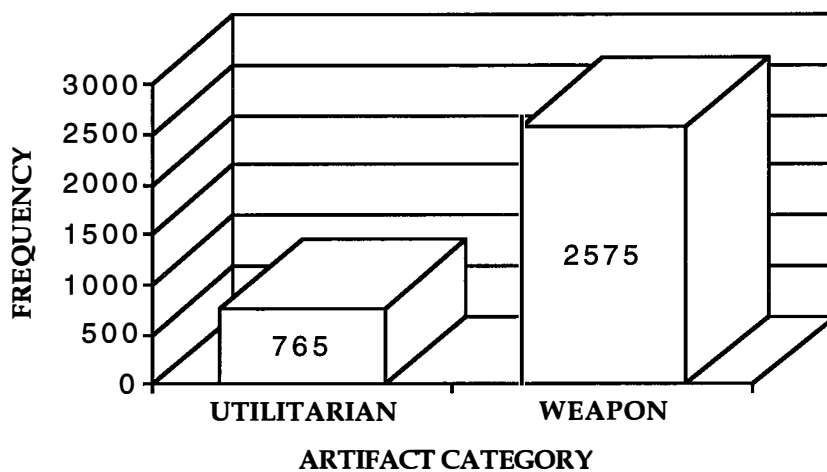


Figure 30. Frequency distribution of utilitarian tools and weapons (n=429).
Axes and knives are included as weapons.

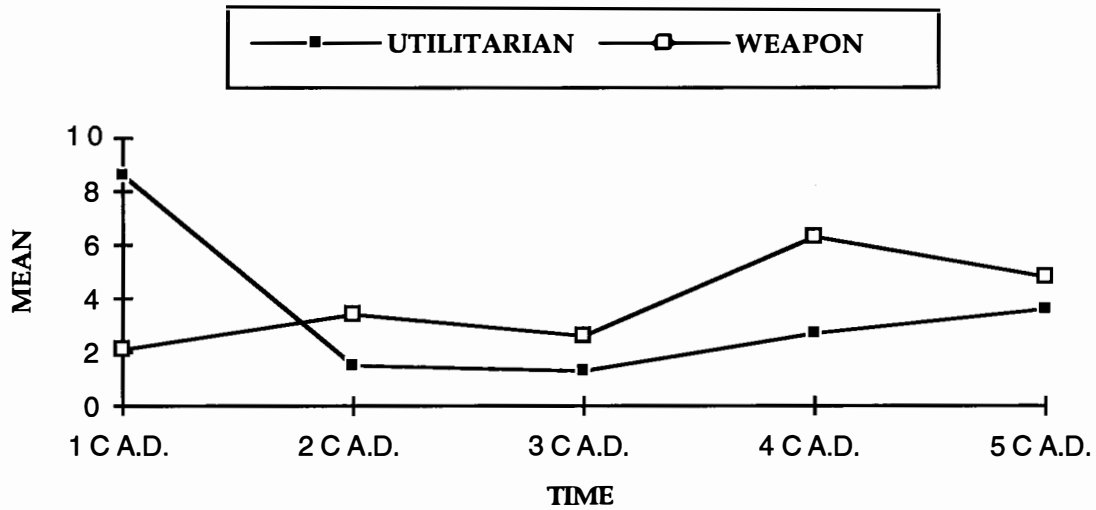


Figure 31. Temporal variations of the mean of utilitarian tools and weapons.
Axes and knives are included as weapons.

bronze ornaments (e.g., over 100 bronze buttons) also included in the category.

The mean number of weapons was less than that of utilitarian tools during the first century A.D. Interestingly, while the mean number of utilitarian tools shows a dramatic change, especially between the first and second centuries A.D., the mean number of weapons did not show significant changes until the fourth century A.D. (although there was a slight decrease in the third century A.D.). The sudden increase in the mean number of weapons during the fourth century may reflect the substantial amount of warfare in the area during the second and third centuries. This is documented in the *Samguk sagi*, which it describes a total of 48 incidences of warfare (out of 196, 24.5%, see Chapter VII, Table 7) during the second and third centuries A.D. The sudden increase of weapons in the fourth century indicates that sociopolitical circumstance, based on the assumption that there was some time-lagging in terms of on-going human behavior and deposition of artifacts in burials.

Only four references to defensive warfare in the fourth century A.D. are recorded in the historical documents for the Silla Kingdom. According to other sources of historical evidence used in this dissertation, however, such as the contents of the Stele of the King of Gwanggaeto of the Goguryo Kingdom, some more important interregional conflicts must have existed in southern Korea. That is, on the basis of the interpretation of the stele, it is widely accepted that Silla, Wa, Gaya, and Goguryo were all involved in political conflict in southern Korea at the beginning of the fourth century. A

slight decline of the mean number of weapons in the fifth century (from 9.02 to 8.92) may have corresponded with that circumstance.

Unfortunately, due to small sample size, it is not possible to analyze burials of the sixth century A.D. onward. There are only nine burials, a sample size too small to make any reasonable inference about general mortuary behavior in terms of the deposition of weapons in the burials (see Table 21). Not a single burial dated to the seventh century has been identified; this appears to be a result of the Silla Kingdom's exposure to the new religion of Buddhism (see below for detail). Thus, it is difficult to know how mortuary practices changed after the fifth century in terms of deposition of mortuary offerings, especially weapons (cf. Pearson 1985:197).

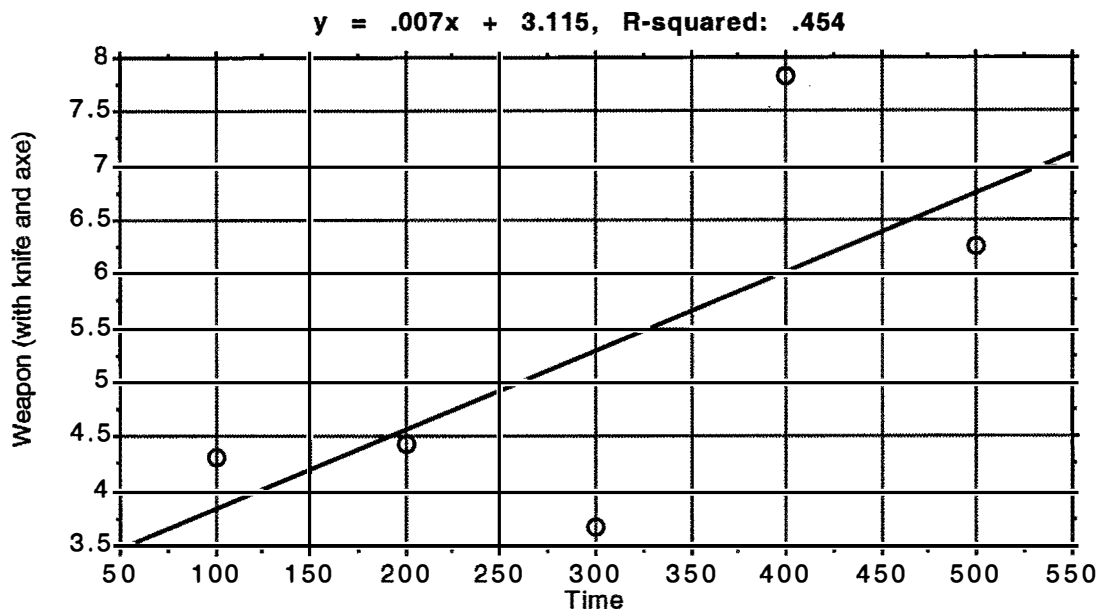
Overall, mortuary populations in the study area dramatically decreased from the sixth century A.D. onward (Pearson 1985:190). This phenomenon has been attributed to the Silla Kingdom's exposure to the new religion, Buddhism. The Silla Kingdom began to be exposed to Buddhism in the fifth century (approximately from 417 A.D. onward, Lee and Lee 1984:248), and the kingdom officially adopted it as a national religion in 527 A.D. Thus, cremation instead of inhumation became the predominant mortuary practice in the Silla Kingdom. As a result, the frequency of burials decreased from the sixth century onward in the study area.

For our purpose, the lack of mortuary evidence of weaponry is unfortunate, because, according to historical records, an unprecedented number of warfare incidents occurred during the sixth and seventh centuries in the Silla Kingdom (a total of 95, 48.5% see Table 7 in Chapter VII). Since the Silla Kingdom was evidently transformed into a state-level society by the

middle of the fifth century, all warfare that occurred after the middle of the fifth century A.D. is not, however, considered to be related to the emergence of state formation. A significant incidence of military conflict occurring after the fifth century was associated with the unification of the Three Kingdoms and expulsion of the Dang Dynasty in China, which once was an allied force of the Silla Kingdom for the purpose of conquering the Baekje and Goguryo Kingdoms, out of the Silla territory. If there had been a sufficient number of sample burials for the sixth and seventh centuries, the historical situation would have provided a unique opportunity to examine whether there was an agreement between the frequency of occurrence of conflicts and the frequency of weaponry artifacts in the graves.

The relationship between the distribution of the mean number of weapons and utilitarian tools strongly suggests that through time warfare may have consistently played a critical role in sociopolitical development in the study area. A linear regression analysis comparing the distributional change through time of the mean number of weapons resulted in a significant correlation coefficient (+ 0.674) (Figure 32). This result shows a positive linear relationship between time and the mean number of weapons. That is, as time progresses the frequency of weapons increases, which is related to the incidence of conflicts recorded in the historical records.

To examine the Pearson's r for statistical significance, a statistical test of the linear correlation between time and the mean number of weapons is restated in terms of an F statistic and put into an analysis of variance (ANOVA) table (Table 23).



df: 4, R: 0.674, R-squared: 0.454, Adj. R-squared: 0.272, and Std. Error: 1.456.

Figure 32. Scattergram of the mean number of weapons through time
Axes and knives are not included as weapons.

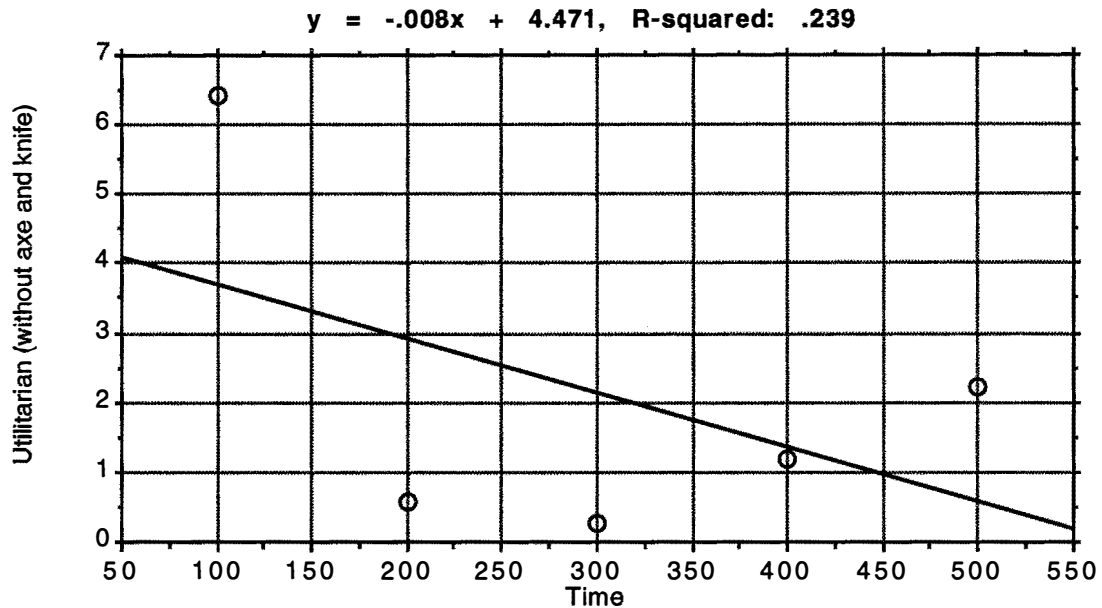
Table 23. ANOVA for Significance of Regression Between the Mean Number of Weapons and Time.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F - test	Significance
Regression	1	5.285	5.285	2.493	Not significant at the $\alpha = 5\%$ level
Residual	3	6.361	2.12	p=0.2125	
Total	4	11.647			

As can be seen in the ANOVA table, the statistic value of $r = + 0.674$ turned out to be not significant at $\alpha = 5 \%$ level.

The results of the analysis of change in the distribution of weapons through time, ($r = + 0.674$) do not directly correspond with the references to warfare chronicled in the historical document *Samguk sagi* ($r = + 0.47$). The correlation coefficient ($r = + 0.674$) is not significant ($p = 0.2125$). But an important point nevertheless is that there are general trends in terms of a positive linear relationship between the frequency of warfare and weapons through time. Increasing warfare through time, then can best be explained through interpretation of the archaeological evidence, which is more reliable and convincing than historical accounts because of a stronger correlation coefficient.

Another regression analysis was performed to examine how the mean of the utilitarian tools changed through time (Figure 33). This analysis demonstrated a negative linear relationship between the distribution and the mean number of utilitarian tools through time. As time progressed, the frequency of utilitarian tools decreased. The negative correlation coefficient is weak ($r = - 0.489$). As shown in table 24, the F - statistic for the regression of the mean number of utilitarian tools through time is not significant at the $\alpha = 0.05$ level. If the approximately 100 miscellaneous ornamental bronze artifacts are eliminated from the total number of utilitarian tools, it should show that utilitarian tools as grave goods does not show conspicuous change throughout time. In other words, the value of the correlation coefficient is rather constant. In turn, this indicates that the utilitarian tools were not as



df: 4, R: 0.489, R-squared: 0.239, Adj. R-squared: -0.015, and Std. Error: 2.531.

Figure 33. Scattergram of the mean number of utilitarian tools through time. Axes and knives are not included.

Table 24. ANOVA for Significance of Regression Between the Mean Number of Utilitarian Tools and Time.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F - test	Significance
Regression	1	6.037	6.037	0.942	Not significant at the $\alpha = 5\%$ level
Residual	3	19.22	6.407	$p=0.4033$	
Total	4	25.258			

sensitive as weapons to socioenvironmental circumstance through time.

To examine how the problematic classification of iron axes and knives influences the mean number of utilitarian tools and weapons, another summary table in which the two artifact categories are incorporated as utilitarian tools instead of weapons was constructed (Table 25). A frequency distribution was drawn based upon table 25 to see whether the two categories changed in terms of the total artifact number (Figure 34). Although the absolute frequency of weapons relatively decreased, the total number (1972, 59.0%) is still greater than that of utilitarian tools (1368, 41%).

Then, to see how the means of the two categories changed through time, a polygon diagram was plotted based upon the data in table 24 (Figure 35). The overall pattern that appeared in the figure is quite similar to the one that appeared in figure 31, except for the smaller gap between the two categories. Thus, even if the entire population of axes and knives is collapsed into a utilitarian category, no significant change has been detected.

On the other hand, to examine how the mean number of weapons, excluding knives and axes, changed over time, another regression analysis of weapons against time was performed. Interestingly enough, the positive linear relationship between the two variables (weapons versus time) increased in strength of correlation (correlation coefficient: $r = + 0.766$, Figure 36 and Table 26). This clearly demonstrates a strong linear relationship between the two variables. To determine whether the observed relationship is actually significantly different from one generated by a chance alone, an analysis of variance was carried out with the results presented in Table

Table 25. Summary Table of Utilitarian Tools and Weapons (Axes and Knives are Included as Utilitarian Tools).

Date	No. of Burial (N)	Utilitarian Tools			Weapon		
		Total	Mean	Ratio	Total	Mean	Ratio
1 C.A.D.	35	300	8.57	79.8%	76	2.17	20.2%
2 C.A.D.	14	22	1.57	31.4%	48	3.43	68.6%
3 C.A.D.	89	117	1.31	33.3%	234	2.63	66.7%
4 C.A.D.	137	369	2.69	29.9%	867	6.33	70.1%
5 C.A.D.	154	560	3.64	42.8%	747	4.85	57.2%
Total	429	1368	3.19	41.0%	1972	4.6	59.0%

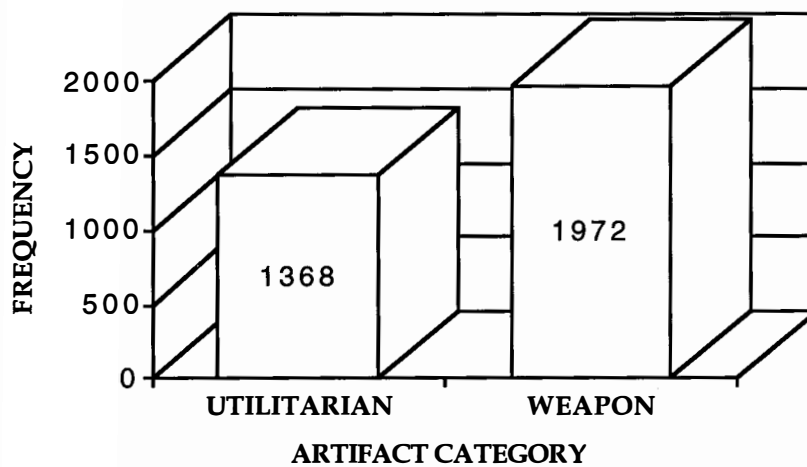


Figure 34. Frequency distributions of utilitarian tools and weapons (n=429). Axes and knives are included as utilitarian tools.

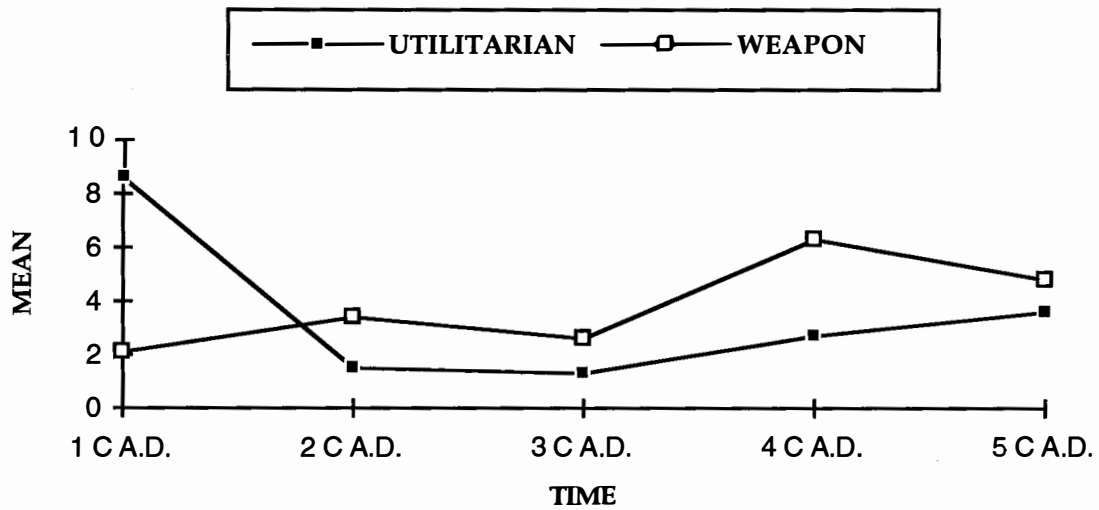
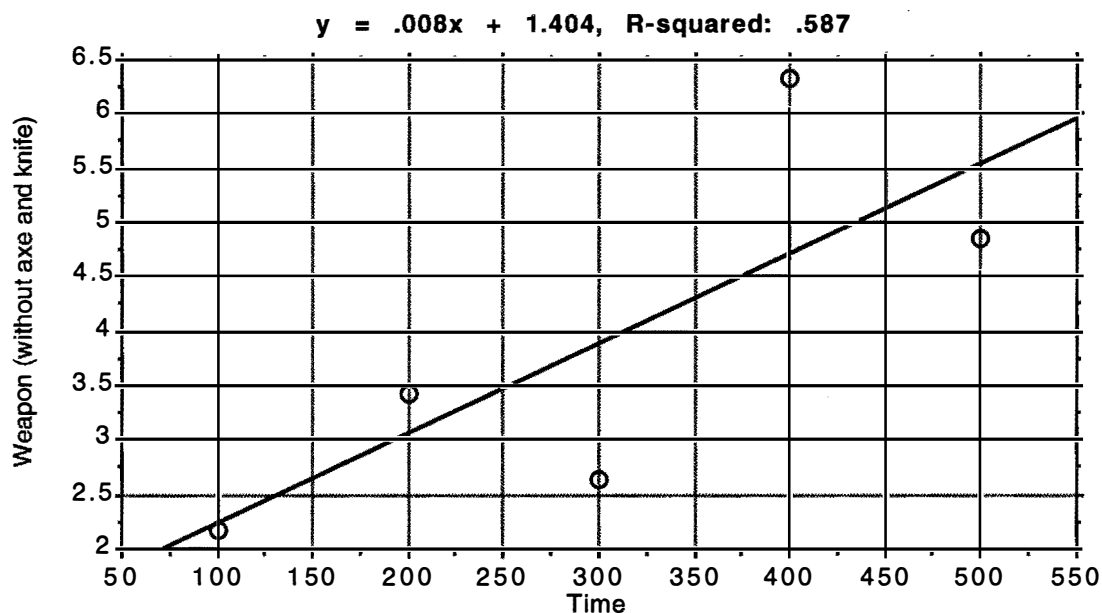


Figure 35. Temporal variations of the mean number of utilitarian tools and weapons. Axes and knives are included as utilitarian tools.



df: 4, R: 0.766, R-squared: 0.587, Adj. R-squared: 0.449, and Std. Error: 1.266

Figure 36. Scattergram of the mean number of weapon through time. Axes and knives are included as weapons.

Table 26. ANOVA for Significance of Regression of the Frequency of Weapons Through Time.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F - test	Significance
Regression	1	6.823	6.823	4.256	Not significant at the $\alpha = 5\%$ level
Residual	3	4.81	1.603	p=0.1311	
Total	4	11.632			

26. According to the statistical test demonstrating the significance of the sample correlation coefficient, the regression correlation between the two variables turned out not to be statistically significant at the $\alpha = 0.05$ level.

This result may have been related to insufficient sample size, or to a misapplication of the statistical technique, given the abrupt jump from the third to fourth centuries in terms of the frequency of weapons. The jump possibly suggests the presence of a few outliers in the sample, suggesting that the regression analysis may not be appropriate in this case. Thus, the relatively high correlation coefficient may be misleading.

But even granting the small sample size and the lack of statistical significance, correlation coefficients as high as $r = + 0.674$ and $r = + 0.766$ need to be seriously taken. The dramatic increase in the frequency of weapons from the third to fourth and fifth centuries strongly supports the idea that there were frequent occurrences of warfare during the earlier time period recorded in the *Samguk sagi*.

Thus, although the discrepancy between the two statistical tests requires further examination, the fact that weapon frequency showed a steady increase over time supports the argument that the role of warfare is a major factor in explanations for the emergence of a state-level society in the study area.

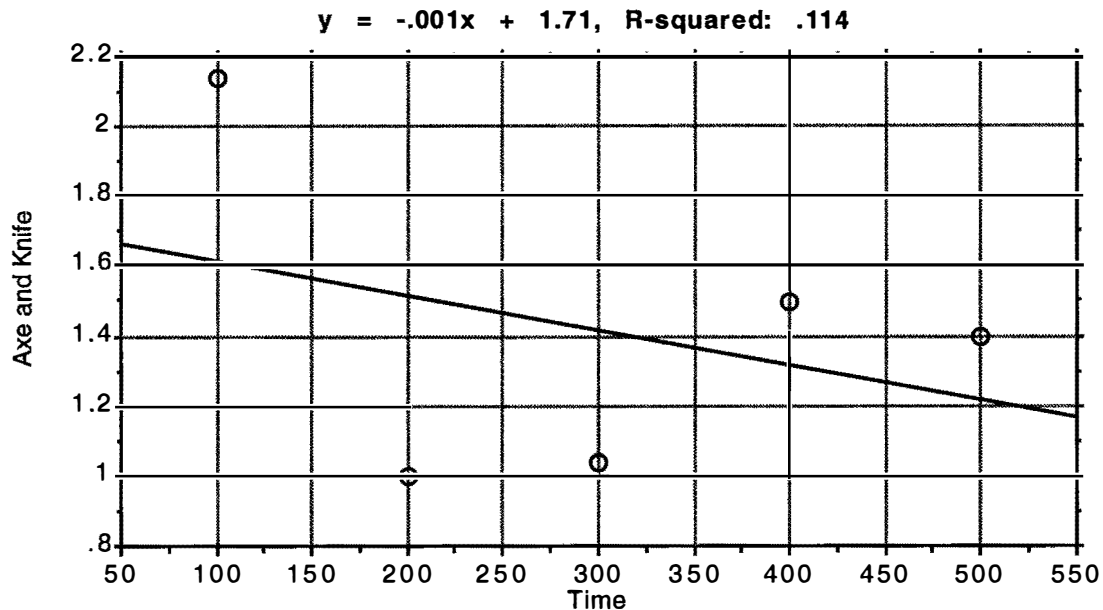
According to the statistical analysis, it turned out that the functional classification of knives and axes is not a critical factor for the research. To investigate the role of knives and axes in terms of their functional classification, the mean numbers of the two artifact groups were sorted, and then a regression analysis was carried out. Interestingly, the mean numbers

of the two artifact types and their distribution through time show a negative linear relationship (correlation coefficient: $r = -0.337$, Figure 37). According to Table 27, the sample correlation coefficient is not significant and the frequency of axes and knives decreases through time. This may indicate that many, if not all, knives and axes found in the study area may have been utilized more frequently as utilitarian tools rather than as weapons, though further sophisticated artifact classification work needs to be conducted.

The analysis of the archaeological data complies with the general expectation that large amounts of warfare occurred, and showed a tendency to increase over time with the emergence of state-level society in the study area. The archaeological data shows an increase in the incidence of conflicts through time.

Examination of the Role of Long-distance Exchange

To examine the relationship between long-distance exchange and the development of the Silla Kingdom, non-local products discovered in the burials of the study area were selected and listed in the following Table 28. As can be seen in table 28, some exotic items such as Chinese bronze mirrors and a Roman glass cup were discovered in the study area. The total number of imported items discovered, however, is marginal to compared with either the total number of locally produced items or that of weapons (see Table 28) recovered from the sampled mortuary populations in the study area. Thus, there is not sufficient archaeological data to postulate the significance of



df: 4, R: 0.337, R-squared: 0.114, Adj. R-squared: - 0.182, and Std. Error: 0.5

Figure 37. Scattergram of the mean number of knives and axes through time.

Table 27. ANOVA for Significance of Regression of the Frequency of Axes and Knives Through Time.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F - test	Significance
Regression	1	0.096	0.096	0.384	Not significant at the $\alpha = 5\%$ level
Residual	3	0.75	0.25	$p=0.5792$	
Total	4	0.846			

Table 28. Traded Items Discovered in the Study Area.

No.	Site	Burial Type	Date	Artifact	Quantity	Reference
1	Joyangdong, Gyungju	Pit-burial with Wooden Chamber	1C B.C.- 1C A.D.	Chinese Bronze Mirror	4	Choi, J. G. 1982; Choi, B. H.:1992
2	Dahori, Euichang	"	"	Chinese Coin	3	Yi et al. 1989:14
3	"	"	"	Chinese Bronze Mirror	1	Yi et al. 1989:53, 81
4	"	"	"	Chinese Bronze Buckle	1	Yi et al. 1989:53, 82
5	"	"	"	Chinese Bronze Bell	1	Yi et al. 1989:53, 82
6	Wolsung, Gyungju	Pit-burial	4 C	Japanese Stone Bracelet	1	National Gyungju Museum et al. 1990:217; Choi, B. H. 1992:55
7	"	Stone-compiled Wooden Chamber	4 C	Goguryo Pottery	1	National Gyungju Museum et al. 1990:63
8	"	Unknown	4 C	Japanese Pottery (Mounted Cup)	1	National Gyungju Museum et al. 1990:69; Choi, B. H. 1992:82, 605
9	"	Wooden Chamber with Stone Mound	4 C	Roman Glass Cup	2	National Gyungju Museum et al. 1990:168
10	Hyundong, Masan	Pit-burial	5 C	Japanese Pottery	1	Lee and Kim 1990
Total					16	

the role of long-distance exchange in the formation of the Silla Kingdom and other possible state level societies, in southern Korea. It should be noted that more non-local exotic items were imported during the earlier period, which correspond to the trend of chiefdom level social organization in the study area. The function of the imported items such as bronze mirrors may tend to be more religious rather than utilitarian except for the Chinese bronze coins (cf. Aikens and Higuchi 1982:246). This may indicate the presence of theocratic chiefdom organizations, in which either priests or shamans, by aid of their supernatural power, were able to control sociopolitical organization during the earlier time.

The existence of interregional exchange between Silla and Chinese dynasties is manifested in the archaeological record. Pearson (1985) has emphasized the implications of the discovery of a number of Roman glass items in Silla tumuli. He interprets this as evidence for the establishment of a sociopolitical apparatus to manage frequent long-distance exchanges with other countries (probably China), which eventually became a source of power leading to unification of the entire Korean peninsula (Pearson 1985:190-191). In particular, Pearson (1985) associated long-distance exchange carried out by the Silla Kingdom, not with the emergence of the state-level society, but with the unification of the Three Kingdoms in Korea. Since many burials yielding impressive Roman glass belong chronologically after the second half of the fifth century A.D., it can be argued that long-distance trade in the study area was a result of state formation.

If there was active interregional exchange which may have stimulated sociopolitical development, it should have been documented in the

archaeological record or the historical text of the *Samguk sagi*. As can be seen in table 28, no nonlocal products dated between the second and third centuries were recovered. A total of six traded items was discovered from the burials of the fourth and fifth centuries. This is not enough to argue for the practices of systematic interregional exchange. In sum, the long-distance exchange model for the explanation of the development of the Silla polity cannot be substantiated with currently available archaeological data.

Recognition of the Silla Kingdom as a State-level Society Through the Examination of Mortuary Data

This section is concerned with the chronology of the emergence of state level society in the study area. On the basis of historical documents, it can be argued that Silla was transformed into the state-level society some time during the reign of King Naemul (356 – 402 A.D.) (see Chapter VII). This argument will be tested against mortuary archaeological data, in particular, burial dimensions and their relation to the presence of exotic grave goods.

Archaeologists have attempted to identify the existence of complex societies by using data from monumental architecture, functional differentiation and interdependence of specialization, identification of political or ceremonial centers in terms of settlement patterns, and mortuary evidence. Among these factors mortuary remains have received the most extensive attention from archaeologists investigating the social organization of pre-/protohistoric social groups. Research on mortuary practices has made a significant contribution to the archaeological recognition of social differentiation in prehistoric societies (Binford 1971; Braun 1979; Brown 1971,

1987; Chapman et al. 1981; Goldstein 1980; O'Shea 1984; Peebles 1971, 1974; Peebles and Kus 1977; Saxe 1970; Tainter 1975, 1977, 1978).

Investigations have indicated that, in complex societies, a wide variety of archaeologically recognizable mortuary practices are present cross-culturally (Binford 1971). Sumptuous mortuary offerings (e.g., traded, strategic, exotic, and luxury items) and lavishly furnished graves may provide good criteria for identifying the presence of a hierarchical social organization.

In association with this general underlying assumption, energy expenditure on burials is frequently treated as a good indicator of the presence of complex societies such as chiefdoms and states. A number of archaeologists (Binford 1971:21; Goldstein 1980; Peebles 1974; Tainter 1975:2, 1977:332) agree that there is a strong positive correlation between high social status of deceased individuals and attendant disruption of normal community activities including relatively greater amounts of corporate involvement in funeral activities. Evidence of energy expenditures should be reflected in burial facilities such as volume/size and elaborateness of the tomb. The underlying assumption here is that "persons who are treated differentially in life will be treated differentially in death" (Peebles 1971:68).

As was pointed out by many archaeologists, the evaluation of energy expenditure does not provide an absolute criterion for all problems of mortuary analysis, although it provides an objective criterion that can be used to make inferences about social differentiation in prehistoric societies (Goldstein 1980:55-57; O'Shea 1984:18; Tainter 1977:332). O'Shea (1984) argues that "at best, levels of energy expenditure inform us as to the minimum level of ranking differentiation operating in a given society, and any further claim

for the measure cannot be accepted" (1984:18), because even egalitarian societies (i.e., band and tribal societies) may be characterized by burial differentiation in both energy expenditure and quantity and quality of material association. In egalitarian societies, the differentiation comes primarily from the age and sex (ascribed) rather than socio-political (achieved) status (Milisauskas 1978:113-114; Randsborg and Chapman 1981:9). Overall mortuary variability in egalitarian societies should be less pronounced than in complex societies. Energy expenditure has advantages over some other measures, "because it is multidimensional and does not have the bias inherent in studies, which, for example, stress artifacts alone (Goldstein 1980:56).

In the case of mortuary practices in the Silla Kingdom from the fourth to sixth centuries, there appears to be a positive correlation between energy expenditure and sociopolitical status. According to the results of mortuary analysis carried out by Pearson et al. (1989),

We found a general agreement between levels of energy consumption and social status inferred from the cluster analysis, showing that the more elaborate burial treatment (i.e., presence of a wooden coffin inside the wooden frame, higher average numbers of grave goods, and larger grave mounds) were associated with the higher rank groups [1989:36-37].

Pearson et al. (1989) found that the size of graves was positively correlated with diversity of grave goods. Stone-Surrounded Wooden Chambers (i.e., *Juksuk Mokgwak Bun*) which usually have bigger graves in terms of size, had a mean number of 13.21 grave goods types, while the mean numbers of grave good types for the large stone chamber tombs and the small

stone chamber tombs are 2.3 and 1.06 respectively (Pearson et al. 1989:17). Combining the above two, Pearson et al. (1989) recognized that there was a correlation between energy expenditure and social status in the Silla mortuary practices.

Therefore, it is expected that in the case of high sociopolitical status individuals in Korea, variations in mortuary practices should include larger or different burial structures as well as differentiation in the quantity and quality of mortuary offerings. Thus, if there was a transition from chiefdom to state level society within the Silla Kingdom, it should be reflected in the mortuary practices. Furthermore, the time period in which the most conspicuous change in terms of dimensions of both grave facilities and mortuary offerings had occurred should be considered to be the date of the formation of the Silla Kingdom as a state-level society.

According to burial samples used in this research, the mean burial size (n=334) is 4.36 m², standard deviation 4.18 m², minimum 0.3 m², maximum 43.5 m². The mean burial volume (n=176) is 5.22 m³, standard deviation 10.9 m³, minimum 0.1 m³, and maximum 91.1 m³. To closely look at how the volume and size of the burials changed through time the following table of descriptive statistics was made (Table 29).

There is a problem with sample size for burials of the first and second centuries. No cases are available concerning burial volume for the first century A.D., and there are only six and 12 burials available for burial size and volume respectively during the second century A.D. Fortunately, however, the insufficient information on the earlier time period is not critical for this research. The primary focus of this section proposes the

Table 29. Summary Statistics of Burial Volume and Size through Time.

unit: vol.-m³, size -m²

Date	No. of Burials (=n)		Mean		St. Dev.		St. Er.		Variance	
	vol.	size	vol.	size	vol.	size	vol.	size	vol.	size
1 C.B.C.	25	25	3.32	2.42	2.89	0.70	0.58	0.14	8.36	0.49
1 C.A.D.	0	2	0	3.4	0	0.71	0	0.5	0	0.5
2 C.A.D.	6	12	3.52	5.43	1.87	2.68	0.76	0.77	3.49	7.19
3 C.A.D.	47	77	2.55	4.14	2.0	2.1	0.29	0.24	4.0	4.43
4 C.A.D.	50	102	5.96	4.86	8.08	3.16	1.14	0.31	65.28	9.96
5 C.A.D.	48	116	9.55	4.61	19.47	6.27	2.81	0.58	378.9	39.34

Note: 0 = Not applicable, or no data available.

appearance of the state level society to have occurred sometime between the fourth and fifth centuries A.D.

To visually show how burial dimensions changed through time, a frequency polygon diagram is drawn with the means and standard deviations of the burial volume is shown in table 29. As analyzed in Figures 38 and 39, the standard deviations of burial volume for the fourth and fifth centuries are larger than those of the means, indicating considerable variation in terms of burial volume. It is notable that there were abrupt increases in the fourth and fifth centuries A.D. in both the mean and standard deviations of burial volume. The standard deviation of burial size also sharply increased from the fourth to fifth centuries, even though the mean burial size show a slight decrease during the same period. The large standard deviation strongly indicates that a wide range of sociopolitical status differentiation among the population began to appear during the fourth century A.D.

Since the tumuli of the royal families were deliberately excluded from the data set for this research in order to avoid statistical outliers, there is a significant difference in burial size between my sample (see Table 29) and Pearson et al.'s (1989:16). Pearson et al. (1989:16) identified three distinct groups of pit sizes: small tombs of up to 12 m² (86.6%); medium size toms from 14 to 22 m² (7.6%); and large tombs from 24 to 32 m² (5.3 %). Pearson et al.'s (1989) average burial size is thus significantly larger than mine.

Since Pearson et al. (1989) were following the chronological frame work generated by Japanese scholars, there is a one hundred year chronological discrepancy between my data set and theirs (see above). Based upon Japanese

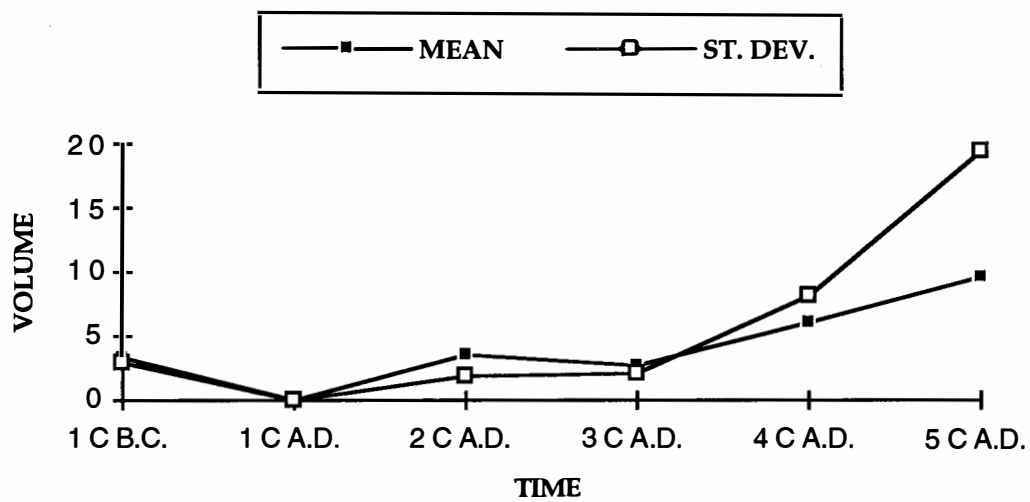


Figure 38. Temporal variations of the mean and standard deviation of burial volume through time.

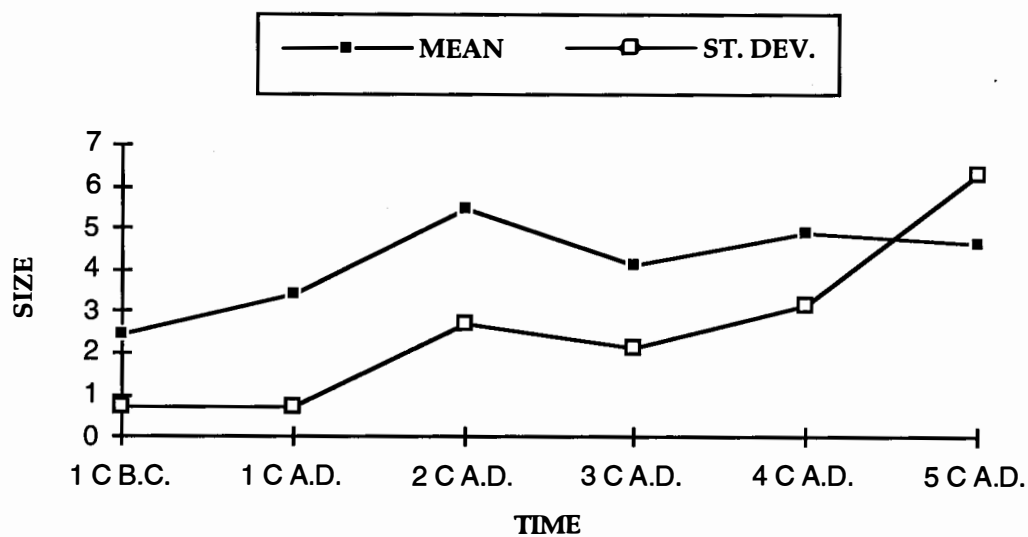


Figure 39. Temporal variations of the mean and standard deviation of burial size through time.

archaeologists' work, Pearson et al. (1989) assumed that most of the burial samples they analyzed in their data set could be dated from the fourth to sixth century A.D.

It is not possible to figure out the descriptive statistics of burial dimensions of Pearson et al.'s (1989) samples, since they did not provide specific information on burial dimensions. Thus, in their data, it is difficult to understand how the means and standard deviations of graves of the Silla Kingdom changed through time, which is critical in that it may provide a valuable source of data for determining the level of sociopolitical complexity between the fourth and sixth centuries A.D.

Despite these chronological problems and lack of complete descriptive statistical information on burial information, it can be clearly seen that there was a great deal of variation in Silla burial size between the fourth and sixth centuries. For example, using Pearson et al.'s (1989) data, we can get a range of burial size from 32 m² (maximum) to 4 m² (hypothetical minimum) equally a 28 m² range of variation, which suggests a conspicuous standard deviation in terms of burial sizes in the Silla Kingdom between the fourth and sixth centuries. If some of the Silla tumuli which yielded gold crowns, girdles, and vessels had been included in the data set of this dissertation research, both the means and standard deviations of the burial size and volume would have been dramatically inflated, indicating a still wider range of sociopolitical distinctions.

Thus, according to my descriptive statistics on the dimensions of Silla burials, a great deal of societal change, probably representing the appearance of state level society, occurred at least from the beginning of the fourth century

A.D. This is when large mounded tombs (i.e., *Juksuk Mokgwak Bun*) began to be constructed in the core area of the Silla Kingdom.

Luxurious grave goods such as, gold and jade began to be deposited in the graves from the third century A.D. Artifacts made of silver, gilt bronze, and iron (especially iron ingots, used as money) began to be deposited from the fourth century. Changes in deposition of luxurious items in graves through time are presented in Table 30, and Figures 40 and 41.

Overall, only small quantities of sumptuous artifacts were deposited in the burials throughout time, but analysis nevertheless reveals significant trends in their distributions.

Table 30 and figures 40 and 41 show that the mean number of jade items remained constantly low throughout time, and overall not many jades were recovered. Interestingly, however, the standard deviation of jade items shows a tendency to increase. Especially, there was a marked increase from the fifth century A.D. Gold artifacts also show a similar pattern as jade (see Table 30 and Figure 41). While the mean number of gold artifacts dating from the third century is a little larger than that of the fourth century, the standard deviation shows a sudden increase (see Table 30). In the fifth century, the standard deviation of gold shows a dramatic increase.

This overall pattern implies that there was not much variation in earlier mortuary populations, which further indicates that there existed relatively minor sociopolitical distinctions in the society until the end of the third century A.D. From the fourth century, however, symptoms of a shift to a wider range of social distinctions occurred, as apparent from changes in mortuary practices. During the fifth century, sociopolitical variation

Table 30. Summary Statistics for Sumptuary Artifacts Between the Third and Fifth Century A.D.

Time A.D.	Material Type of Artifact										Frequency of Sub-ordinate Chamber
	Jade		Iron Ingot		Gilt Bronze		Silver		Gold		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	
3C (n=89)	0.79	1.99	-	-	-	-	-	-	0.90	0.42	2 (2.3%)
4C (n=137)	0.42	2.04	0.38	2.33	0.18	1.17	0.04	0.19	0.65	2.48	14 (10.2%)
5C (n=145)	0.68	6.35	1.10	6.99	0.17	0.58	0.08	0.56	1.08	10.88	17 (11.7%)

Note: S.D. = Standard Deviation.

- = not applicable, or no data available.

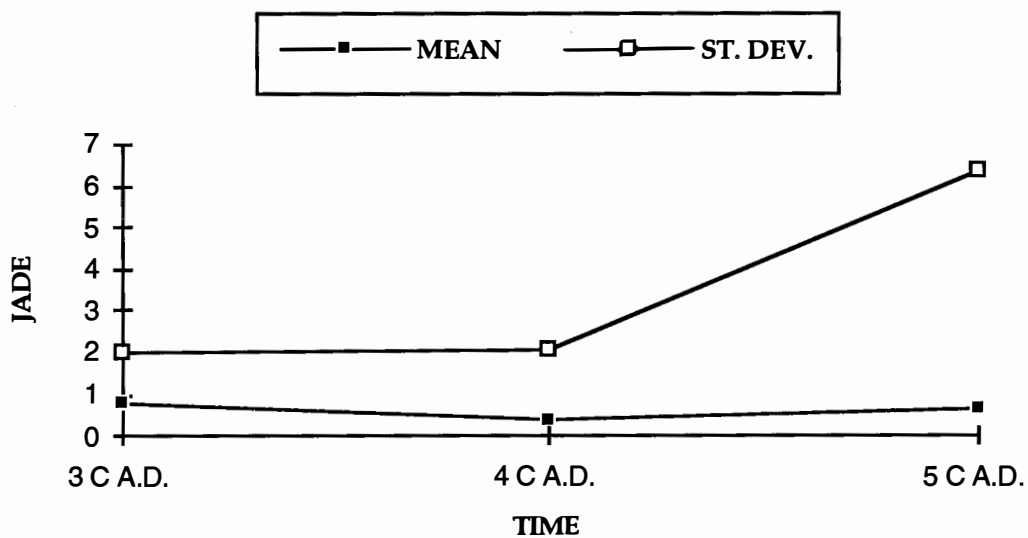


Figure 40. Temporal variations of the mean and standard deviation of jade objects discovered in burials through time.

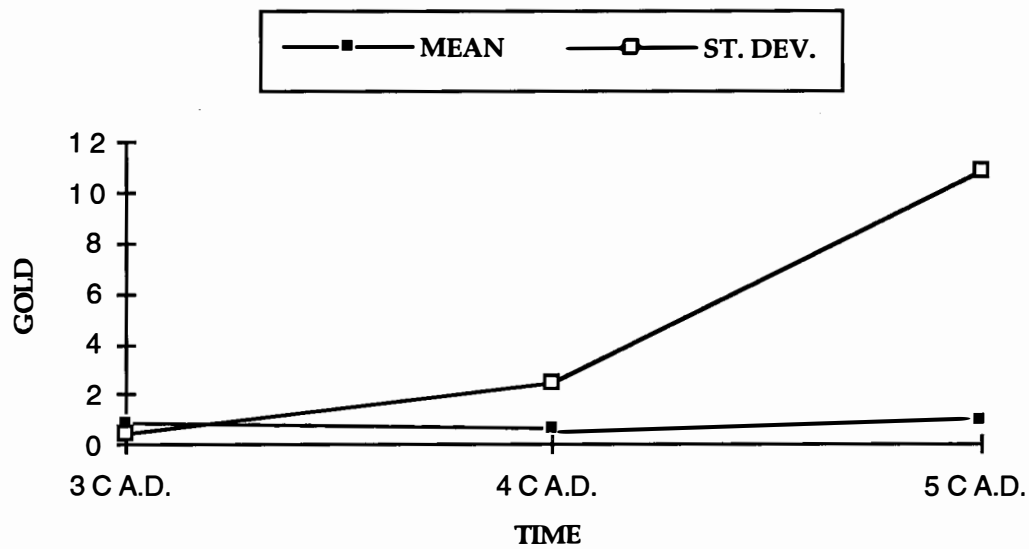


Figure 41. Temporal variation of the mean and standard deviation of gold discovered in burials through time.

continued to increase. Additionally, as time progressed, a few more lavish items (i.e., artifacts of iron, gilt bronze, and silver) began to be deposited in the burials. While gilt-bronze and silver do not show notable change over time in both mean and standard deviation, the standard deviation of iron ingots abruptly increased in the fifth century.

To examine evidence for the appearance of societal differentiation further, all burials dated from the third century were divided into two different groups, based on presence or absence of sumptuous artifacts (i.e., jade, gilt bronze, gold, and silver). Group one comprises burials without lavish artifacts and Group Two represents burials with sumptuous artifacts. The graves of Group One, without exotic grave goods, can be assumed to be those of commoners, while the graves of Group Two, with lavish artifacts, can be assumed to be those of elite. The expectation is that there should be a significant difference between the two groups in terms of burial dimensions, in concordance with expected differentiation in energy investment on burial construction. Essentially, larger graves with impressive items represented the higher sociopolitical status, and smaller graves represent lower sociopolitical status. Thus, to examine if there is any correlation between energy expenditure and the presence of sumptuary grave goods, summary statistics for the two different groups are provided in Table 31.

As indicated in Table 31, there is a clear difference between the two groups in terms of the mean numbers and standard deviations for both burial size and volume. The high values of the standard deviations for both the size and volume of burials show a wide range of variation among Group Two. This indicates a wide range of social distinctions among elites.

Interestingly, the standard deviation of the burial volume of Group One also shows a wide variation, which indicates that there were some sociopolitical variations even among commoners.

Table 31. Summary Statistics for the Two Burial Groups.

	Group	No. of Cases	Mean	S.D. ^a	S.E. ^b of Mean	Mean Difference	Levene's Test for Equality of Variances
Burial Size (Unit: m ²)	1	217	3.79	2.83	0.19	-2.9388	F=29.18, p=0.000
	2	80	6.73	6.81	0.76		
Burial Volume (Unit: m ³)	1	97	3.86	7.97	0.81	-6.5923	F=19.56, p=0.000
	2	48	10.45	17.79	2.57		

Note: Group 1, without any sumptuous artifacts (i.e., jade, gilt bronze, silver, or gold).

Group 2, with at least one sumptuous artifact.

^aStandard Deviation.

^bStandard Error.

To test the variance of the group means, a *t*-test was conducted (Table 32). The high values of the standard deviations of the burial size and burial volume of Group Two indicate one of the important statistical assumptions of normality. That is, there are some outliers in mortuary populations. Yet, since the sample size is large, the violation should not be too critical, and the result of the *t*-test should be valid.

On the other hand, according to Levene's test for equality of variances, one of the assumptions of the pooled *t*-test, that there exist equal population

variances, is violated. Therefore, it is necessary to use the separate sample variances rather than a pooled sample of variances. The results of the calculated t -statistics for both the size and volume of the burials indicates that the difference between Group one and Group two is significant (see Table 32).

Table 32. T - test for Equality of Mean Between Burial Size and Volume.

	Variances	t -value	$d.f.$ ^a	2-Tail sig.	S.E. ^b of difference	95% confidence interval for Difference
Burial Size	Equal	-5.26	295	0.000	0.559	(-4.039, -1.838)
	Unequal	-3.74	89.23	0.000	0.785	(-4.499, -1.379)
Burial Volume	Equal	-3.09	143	0.002	2.137	(-10.816, -2.368)
	Unequal	-2.45	56.53	0.017	2.691	(-11.983, -1.201)

^a Degree of freedom.

^b Standard Error.

Based upon the result of the statistical analysis, it is concluded that there are clear differences in the mean numbers of burials and burial volumes between Group one and Group two. In other words, burials with sumptuous grave goods were much larger in both size and volume. This indicates that elaborate burials with exotic grave goods were constructed for elites, which supports the implication that a wide range of social differentiation began to appear hand in hand with the emergence of the Silla Kingdom from the beginning of the fourth century A.D.

Another important change to be noted is that sub-ordinate chambers, in which a great deal of mortuary offerings were placed, also began to be constructed from the third century (see Table 30). The frequency of sub-ordinate chambers also shows a rapid increase from the fourth century A.D. onward. Marked mortuary variation in this dimension during the fourth and fifth century again indicates that differentiation in sociopolitical status in Silla was rapidly accelerating.

Based upon changes in mortuary practices it can be argued that the transition from earlier chiefdoms to the Silla Kingdom as a state-level society in the study area may already have begun to take place in the second half of the third century. According to the *Samguk sagi*, during the second and third centuries A.D., Silla was engaged in many offensive and defensive conflicts. It is documented that Silla invaded neighboring independent polities, and expanded its territory during the second century, and that many larger polities invaded Silla during the third century, but none of them was successful in conquering the Silla polity (see Chapter VII, Tables 7 and 8).

As a result of those numerous offensive and defensive war campaigns, hierarchical reorganization of sociopolitical status may have rapidly taken place in Silla at least from the beginning of the third century A.D. onward. Successful warriors were rewarded with higher sociopolitical status, and that phenomenon is evident in the mortuary evidence. When those people who held high sociopolitical status during the third century died, they were qualified to be placed in high mounded-tombs.

Although mounded-tombs may have appeared at the beginning of the fourth century A.D., there is a strong possibility that the sociopolitical

transition from chiefdom to state may have taken place somewhat earlier. That is, the emergence of the state level society in association with the appearance of mounded-tombs in Silla may have to be pushed back in to the past. This is because although mounded tombs began to appear at the beginning of the fourth century A.D., people who were qualified to be buried in the mounded tombs already reached high sociopolitical status some time earlier when they were alive. That is, interval or time lagging between the sociopolitical change and the appearance of the mounded-tombs may have to be considered. Thus, the result of mortuary analysis complies with the expectations drawn from the historical document, *Samguk sagi*. As was mentioned above and in the previous chapter, it has long been generally acknowledged by many historians and archaeologists that during the fourth century (especially from the time of King Naemul), a rather highly centralized Silla Kingdom had taken shape (Lee, J. W. 1982:40).

Summary

The archaeological manifestation of warfare in association with the emergence of state formation has been examined in this chapter. The lack of information concerning residential data for the Silla Kingdom and its neighboring polities in southern Korean peninsula limits the discussion of warfare to mortuary evidence. Weaponry artifacts recovered from burials were examined and interpreted as material evidence for the presence of extensive and intensive societal conflicts in the study area.

There is a slight discrepancy between the results of the statistical analysis of warfare based on data that appeared in the historical document of

the *Samguk sagi* and the results of the statistical analysis of weaponry artifacts from burials. Yet, in terms of the general trend concerning the frequency of occurrence of warfare, both historical documents and the archaeological record are in accord. That is, the result of the archaeological data analysis largely complies with the expectations drawn from the historical document, *Samguk sagi*.

Especially the presence of a great amount of weaponry artifacts in burials strongly suggests the occurrence of frequent military conflict between the Silla Kingdom and its neighboring polities. The result of the statistical analysis of weaponry artifacts manifested in the archaeological record indicates an increasing trend of the occurrence of warfare, corresponding with state formation in southern Korea.

Evidence of long-distance exchange has also been archaeologically documented. The quantity of nonlocal products recovered, however, is negligible in comparison with that of locally-produced items. The mechanism of long-distance exchange appears to have played a minimal role for state formation in the Silla area.

To examine the developmental chronology of state level society in the study area, exotic items and burial dimensions were analyzed using descriptive statistics. The result of the analysis indicates that the dimensions of burials became significantly larger, and more sumptuous grave goods began to be deposited in burials from the fourth century onward. In particular, the standard deviations of burial dimensions and the disposition of lavish grave goods abruptly increase during this time, indicating that a wide range of sociopolitical differentiation appeared from the fourth century

A.D. onward. Thus, it seems highly likely that the Silla Kingdom became a state-level society sometime between the middle of the fourth and the beginning of the fifth centuries (i.e., 356 – 402 A.D.).

CHAPTER XI

SUMMARY AND CONCLUSIONS

This research has attempted to examine the role of warfare and its effect on the emergence of state level society in the southern portion of the Korean peninsula. This has been accomplished through the analysis of both historical documents and archaeological data. Additional effort was made to investigate the possible causative factors of both irrigation works and long-distance exchange. Evidence of these two mechanisms is manifested both in the textual and archaeological record. Two steles concerning the construction and maintenance of irrigation structures found near the study area were also incorporated into the research in conjunction with assessing the role of hydraulic works. While the archaeological record indicates that both long-distance exchange and irrigation works had existed long before the emergence of a state-level, the cumulative body of evidence for both these factors was not sufficient to demonstrate a significant role for them in the emergence of complex society in the study area. The textual sources also suggest that after state-level society developed in the study area, the centralized government took over the management of hydraulic works and controlled the market economy. This, again, implies that irrigation works and long-distance exchange were not closely associated with the formation of the state in the area under investigation.

On the contrary, the evidence of recorded occurrence of conflict between independent polities located in southern Korea is much more prevalent in the *Samguk sagi*, than that of hydraulic works and interregional trade. Furthermore, there is a general agreement between the literary sources and archaeological record in terms of showing that as the state-level society emerged, there was a tendency for an increasing frequency of both warfare and military weapons. Especially, the result of an analysis of empirical data consisting of various kinds of metal weapons that probably were used in battles strongly supports the premise that warfare was a significant factor in the course of the Silla Kingdom's development.

Thus, the formulated hypothesis number one: "In the southern portion of the Korean peninsula, local polities that had been developing in the area made the transition from chiefdom to state level organization. This was a process of autogenous development, principally by means of warfare, that culminated mainly between 300 and 500 A.D." was tested against both textual and archaeological evidence.

It has been demonstrated that in the southern portion of the Korean peninsula between the second century B.C. and the third century A.D. there were at least 78 independent polities. Most of these were tribal, although a few were chiefdom level societies. The Silla were considered to be one of the chiefdoms during the period. As time progressed, many small independent polities integrate into bigger polities, as was recorded in the *San quo chi*. Although some fusion had taken place without immediate physical confrontations as documented in the *Samguk sagi*, material evidence of numerous metal weapons clearly suggests that there were incessant conflicts

between polities motivated by territorial acquisition and hegemonic control of their neighboring polities in southern Korea at least from the first century onward.

All the defensive and offensive intercommunity conflict that occurred in the study area were fundamentally autogenous and conducive to the formation of complex societies. The local indigenous developmental process was confirmed in the literary sources in conjunction with material evidence recovered in the territory of Silla and its adjacent areas. Although some non-locally produced items have been recovered in the study area and southern Korea in general, they should not be regarded as the evidence of a foreign military's intrusion, because the total quantity of imported exotic artifacts is minimal. The small amount of these items are not sufficient to show that there was systematic interregional exchange between the Silla polity and other foreign countries.

The hypothesis number two: "The formation of the Silla Kingdom that was achieved during this time was largely precipitated by external pressures, particularly from Baekje, Wa (ancient Japan), Gaya, Goguryo, and other states that had already formed surrounding Silla. The consolidation of the Silla Kingdom was not brought about through invasion and conquest by outside forces, however, but on the contrary, through local victory against those forces" was also tested against textual sources in corroboration of archaeological evidence. Literary sources mention that the Silla polity was attacked 46 times by either neighboring polities or strong countries such as Baekje, Wa, Gaya, Malgal, Naklang, and Goguryo between the first and third centuries A.D. The defensive warfares that occurred in the Silla Kingdom

may have contributed to social solidarity of the Silla people who became cohesive in order to defend themselves from these military threats from outside polities. Meanwhile, for the purpose of economic gain and political conquest, Silla invaded into neighboring independent polities between the first and third centuries A.D. (14 documented offensive warfares) as well. The combination of both defensive and offensive military conflicts made it possible for Silla to become a larger political entity. The repetitive process of these offensive and defensive encounters might have caused a wide range of internal sociopolitical hierarchy in the Silla polity, which eventually became stepping stones for the emergence of a state-level society.

Weaponry items excavated from burials in the research area were statistically analyzed by linear regression to examine whether there is an increase in the frequency of weapons through time as the Silla Kingdom emerged. It was detected by this analysis that there is a strong correlation between the frequency of weapons and the passage of time. However, according to a statistical test for the significance of the sample correlation coefficient, the observed relationship between the frequency of weapons and time does not appear to be statistically significant ($p = 0.1311$). Yet, the high correlation coefficient is strong enough to argue the important function of warfare. Especially, a remarkable increase in the quantity of weaponry in the fourth and fifth centuries clearly indicates that a great number of conflicts occurred in the course of the development of the Silla Kingdom during this period.

In the course of the analysis, no concrete textual or material evidence that would indicate a sudden outside military intrusion could be identified

during the process of the development of the Silla Kingdom. Therefore, the "horserider" invasion or migration theory formulated by Egami (1964) and supported by a few scholars (Choi, B. H. 1992; Kiley 1973; Ledyard 1975; Shin 1992) in slightly modified versions cannot be verified as a causal factor in the development of state-level society in southern Korea.

The warfare model, as proposed by Carneiro (1970), has been confirmed as helpful in explaining the formation of the Silla Kingdom in the Korean peninsula. The results of this research suggest that central aspects of this 'mono-causal' and simple model are valid and useful in explaining the development of the state-level society. On the other hand, the automatic application of Carneiro's model in all its aspects, without considering the unique regional environmental conditions and long term particular historical context, is not desirable and can possibly be misleading. In this research, Carneiro's population arguments were not supported. Even though there is evidence of significant population growth from the third century A.D. to the eighth century A.D. in the study area (0.039 % per year), it is difficult, if not impossible, to support Carneiro's postulation that population growth in relation to limited carrying capacity caused conflict between and among the independent polities of southern Korea. Quite the contrary, according to my analysis of the *San quo chi* and *Samguk sagi*, population appears to have been regarded as a source of wealth and a positive factor, which is quite different from the premise of Carneiro's warfare model. Indeed, some historical accounts imply that *underpopulation* was a cause of conflict between polities. Moreover, the analysis of historical documents shows that in the long-term perspective, there was a strong positive linear

correlation between environmental stresses affecting agriculture and the occurrence of warfare. This indicates that shortages of food caused by various environmental stress may have stimulated people to invade neighboring polities to obtain food resources. Thus, although the warfare model fits generally very well with the overall historical and archaeological context in the study area, the unique causative factors operating at this time and in this geographic area must be meticulously taken into account.

I believe that this dissertation research project not only contributes to the study of Korean archaeology and history but also makes a good case for the study of mechanisms responsible for the formation of the state in other world regions. Although I think that the arguments made in my dissertation are basically valid, the evidence is far from conclusive and, more importantly, there are still a great many research questions (e.g., about seasonality of war, locations of fortifications, and intensity of warfare) that need to be investigated.

A great many ongoing archaeological research projects have revealed a tremendous amount of newly discovered weapons in southern Korea since I carried out my fieldwork two years ago. I anticipate that war-related objects will continue to be recovered in the area. In the future, a more sophisticated research design, oriented toward testing the hypothesis of 'the role of warfare in the formation of states in southern Korea' by utilizing the abundant metal weapons excavated from burials, by studying more fully the presence of fortifications, and by working further with the aid of historical documents, should be formulated to further examine the arguments made in this dissertation.

APPENDICES

APPENDIX A

LIST OF WARFARES RECORDED IN THE ANNALS OF THE SILLA
KINGDOM IN THE *SAMGUK SAGI*

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
1	51		Hyukguhse /8	Wa ^b	Silla	Wa invaded Silla, but they withdrew soon afterwards.
2	28	4	Hyukguhse /30	Naklang	Silla	Naklang invaded Silla, but they withdrew soon afterwards.
3	4	7	Namhae/1	Naklang	Silla	Naklang invaded Silla, but they withdrew soon afterwards.
4	14		Namhae/11	Wa	Silla	Wa attacked Silla with 100 battleships, Silla deployed 1000 warriors.
5	14		Namhae/11	Naklang	Silla	Naklang attacked Gumsung (capital).
6	36	8	Yuri/13	Naklang	Silla	Silla lost one fortification to Naklang.
7	40	9	Yuri/17	Hwaryuh Bulnae	Silla	The allied polities deployed mounted warriors.
8	64	8	Suktalhae/8	Baekje	Silla	Baekje attacked Wasan Fortification. Silla deployed 2000 mounted warriors.
9	64	10	"	Baekje	Silla	Baekje attacked Guyang Fortification.
10	66		"/10	Silla	Baekje	Silla recovered Wasan Fortification.
11	70		"/14	Baekje	Silla	Baekje attacked Silla.
12	73		"/17	Wa	Silla	Wa invaded Mokchul Island of Silla.
13	74	8	"/18	Baekje	Silla	Baekje attacked Silla.
14	75	10	"/19	Baekje	Silla	Baekje captured the Wasan fortification.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
15	76	9	"/20	Silla	Baekje	Silla recaptured the Wasan fortification and Silla killed 200 Baekje citizens.
16	77	8	"/21	Silla	Gaya	Silla captured 1000 Gaya warriors.
17	85	1	Pasa/6	Baekje	Silla	Baekje attacked Silla.
18	94	2	Pasa/15	Gaya	Silla	Gaya invaded Silla, and Silla repelled the Gaya with 1000 equestrians.
19	96	9	Pasa/17	Gaya	Silla	Gaya invaded Silla. The king of Silla led 5000 warriors to battle Gaya.
20	102	8	Pasa/23	Silla	Eumjibbul <i>guk</i>	Silla invaded Eumjibbul <i>guk</i> [polity].
21	104		Pasa/25	Silla	Siljik <i>guk</i>	Silla defeated Siljik <i>guk</i> and relocated its citizens.
22	106	8	Pasa/27	Silla	Gaya	Silla attacked Gaya.
23	108		Pasa/29	Silla	Biji <i>guk</i>	Silla annexed Biji <i>guk</i> [polity].
24	108		Pasa/29	Silla	Dabul	Silla annexed Dabul <i>guk</i> [polity].
25	108		Pasa/29	Silla	Chopal	Silla annexed Chopal <i>guk</i> [polity].
26	115	2	Jima/4	Gaya	Silla	Gaya attacked Silla with infantrymen and equestrians.
27	116	8	Jima/5	Silla	Gaya	Silla attacked Gaya with 10,000 warriors.
28	121	4	Jima/10	Wa	Silla	Wa invaded Silla.
29	125	1	Jima/14	Malgal	Silla	Malgal invaded Silla and killed officials and citizens of Silla.
30	125	7	Jima/14	Malgal	Silla/ Baekje	Silla/Baekje alliance was made. Baekje sent five generals to help Silla.
31	137	2	Isung/4	Malgal	Silla	Malgal invaded Silla and burnt five wooden palisades.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
32	139	8	Isung/6	Malgal	Silla	Malgal raided Silla households.
33	139	10	Isung/6	Malgal	Silla	Malgal raided and looted.
34	146	10	Isung/13	Abdok <i>guk</i>	Silla	Abdok <i>guk</i> people rebelled against Silla. Silla defeated them and relocated Abdok <i>guk's</i> citizens.
35	165	10	A-dalla/12	Silla	Baekje	Silla attacked Baekje.
36	167	7	A-dalla/14	Baekje	Silla	Baekje captured 1000 Silla citizens.
37	167	8	A-dalla/14	Silla	Baekje	Silla attacked Baekje with 20,000 warriors including 8000 equestrians.
38	170	10	A-dalla/17	Baekje	Silla	Baekje attacked Silla.
39	185	2	Bulhue/2	Silla	Somun	Silla annexed Somun <i>guk</i> [polity].
40	188	2	Bulhue/5	Baekje	Silla	Baekje attacked Silla.
41	189	7	Bulhue/6	Silla	Baekje	Silla captured/killed 500 Baekje warriors.
42	190	8	Bulhue/7	Baekje	Silla	Baekje invaded Silla. Silla sent 500 warriors to attack Baekje and lost.
43	199	7	Naehae/4	Baekje	Silla	Baekje encroached on Silla's border.
44	203	10	Naehae/8	Malgal	Silla	Malgal encroached on Silla's border.
45	208	4	Naehae/13	Wa	Silla	Wa encroached on Silla's border.
46	209	7	Naehae/14	Silla/ Gaya	Posang Palguk	Silla helped Gaya by reclaiming 6000 Gaya allied citizens.
47	214	7	Naehae/19	Baekje	Silla	Baekje invaded Silla. Silla sent 6000 warriors to attack Baekje and conquered one Baekje fortification.
48	221		Naehae/23	Baekje	Silla	Silla expelled Baekje invaders.
49	225	10	Naehae/27	Baekje	Silla	Silla warriors were defeated.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
50	227	7	Naehae/29	Silla	Baekje	Silla killed 1000 Baekje warriors.
51	231	7	Jobun/2	Silla	Gammun <i>guk</i>	Silla annexed Gammun <i>guk</i> [polity].
52	232	4	Jobun/3	Wa	Silla	Silla with 1000 equestrians killed 1000 Wa warriors.
53	233	5	Jobun/4	Wa	Silla	Wa invaded eastern territory of Silla.
54	233	7	Jobun/4	Wa	Silla	Silla burnt Wa battleships and many warriors of Wa drowned.
55	240		Jobun/11	Baekje	Silla	Baekje encroached on the western territory of Silla.
56	245	10	Jobun/16	Goguryo	Silla	Goguryo encroached on Silla's northern territory, Silla could not win and withdrew.
57	255	9	Chumhae/9	Baekje	Silla	Baekje attacked Silla, and Silla lost one general.
58	255	10	Chumhae/9	Baekje	Silla	Baekje attacked one of Silla's fortifications.
59	266	8	Michu/5	Baekje	Silla	Baekje attacked the same fortification. Silla expelled invaders with 200 warriors.
60	272	11	Michu/11	Baekje	Silla	Baekje attacked Silla territory.
61	278	10	Michu/17	Baekje	Silla	Baekje attacked one of Silla's fortifications.
62	283	9	Michu/22	Baekje	Silla	Baekje encroached on Silla territory.
63	283	10	Michu/22	Baekje	Silla	Baekje surrounded one Silla fortification.
64	287	4	Yurae/4	Wa	Silla	Wa captured 1000 Silla citizens.
65	292	6	Yurae/9	Wa	Silla	Wa conquered one of Silla's fortifications.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
66	294	S ^c	Yurae/11	Wa	Silla	Wa attacked one of Silla's fortifications.
67	297		Yurae/14	Isuhgo <i>guk</i>	Silla	Isuhgo <i>guk</i> attacked the capital of Silla.
68	346		Heulhae/37	Wa	Silla	Wa raided one of Silla's Islands. They surrounded the capital and attacked.
69	364	4	Naemul/9	Wa	Silla	Wa attacked near capital. Silla sent 1000 warriors to defeat Wa.
70	393	5	Naemul/38	Wa	Silla	Wa surrounded the capital. Silla deployed 200 equestrians and 1000 infantrymen to kill and capture many Wa warriors.
71	395		Naemul/40	Malgal	Silla	Malgal encroached on the northern territory of Silla.
72	403	7	Silsung/2	Baekje	Silla	Baekje encroached on Silla territory.
73	405	4	Silsung/4	Wa	Silla	Wa attacked one of Silla's fortifications. The Silla King with equestrians killed 300 Wa warriors.
74	407	3	Silsung/6	Wa	Silla	Wa encroached on Silla's eastern territory.
75	407	6	Silsung/6	Wa	Silla	Wa captured 100 Silla citizens.
76	415	8	Silsung/14	Wa	Silla	Silla defeated Wa at Pung Island.
77	431	4	Nulji/15	Wa	Silla	Wa encroached on Silla's eastern territory and surrounded one of Silla's fortifications.
78	440		Nulji/24	Wa	Silla	Wa encroached on Silla's southern territory and captured Silla citizens.
79	440	6	Nulji/24	Wa	Silla	Wa encroached on Silla's eastern territory.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
80	444	4	Nulji/28	Wa	Silla	Wa surrounded the capital of Silla for ten days. The Silla king attacked them with several thousand of equestrians, but lost.
81	450		Nulji/34	Goguryo	Silla	Goguryo attacked the western Silla territory.
82	454	8	Nulji/38	Goguryo	Silla	Goguryo attacked the northern Silla territory.
83	455	10	Nulji/39	Goguryo	Baekje/ Silla	Silla helped Baekje and attacked Goguryo.
84	459	4	Jabe/2	Wa	Silla	Wa attacked the eastern Silla territory with 100 battleships. Silla killed many Wa warriors when they were retreating.
85	462	5	Jabe/5	Wa	Silla	Wa attacked one of Silla's fortifications and took 1000 people.
86	463	2	Jabe/6	Wa	Silla	Wa attacked one of Silla's fortifications.
87	468		Jabe/11	Goguryo/	Silla	The allied forces attacked one of Silla's Malgal fortifications in the north.
88	476	6	Jabe/19	Wa	Silla	Wa attacked the eastern edge of Silla territory. Silla killed/captured 200 Wa warriors.
89	477	5	Jabe/20	Wa	Silla	Wa attacked Silla and gained nothing.
90	479	11	Soji/1	Malgal	Silla	Malgal encroached on Silla's northern territory.
91	481	3	Soji/3	Goguryo/ Malgal	Silla	Goguryo and Malgal conquered ten Silla fortifications. Silla eventually killed 1000 warriors of the allied forces.
92	482	5	Soji/4	Wa	Silla	Wa attacked Silla territory.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
93	484	7	Soji/6	Goguryo	Silla / Baekje	Silla and Baekje defeated Goguryo.
94	486	4	Soji/8	Wa	Silla	Wa attacked Silla territory.
95	489	9	Soji/11	Goguryo	Silla	Goguryo attacked the northern Silla territory.
96	489	10	Soji/11	Goguryo	Silla	Goguryo conquered one of Silla's fortifications.
97	494	7	Soji/16	Goguryo	Silla /	Goguryo attacked Silla and Baekje helped Baekje Silla by sending 3000 warriors.
98	495	8	Soji/17	Goguryo	Baekje/ Silla	Silla helped Baekje.
99	496	7	Soji/18	Goguryo	Silla	Goguryo attacked one of Silla's fortifications.
100	497	4	Soji/19	Wa	Silla	Wa attacked Silla territory.
101	497	8	Soji/19	Goguryo	Silla	Goguryo conquered one of Silla's fortifications.
102	512		Jijeung/13	Silla	Woosan	Silla annexed Woosan <i>guk</i> [polity].
103	548	2	Jijeung/9	Goguryo/ [Dong] Ye	Baekje/ Silla	Silla helped Baekje by sending 3000 warriors.
104	550	3	Jijeung/11	Silla	Baekje	Silla attacked Baekje and captured one Baekje fortification.
105	550	3	Jijeung/11	Silla	Goguryo	Silla attacked Goguryo and captured one of Goguryo's fortifications.
106	551	1	Jinheung/12	Silla	Goguryo	Silla attacked Goguryo and captured ten Goguryo fortifications.
107	553	7	Jinheung/14	Silla	Baekje	Silla attacked the northeastern Baekje territory, capturing some villages.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
108	554	7	Jinheung/15	Baekje/ Gaya	Silla	Baekje and Gaya attacked one of Silla's fortifications. Silla killed the king, four high officials, and 29,600 warriors of Baekje.
109	562	7	Jinheung/23	Baekje	Silla	Baekje raided Silla households, Silla killed/captured 1000 Baekje warriors.
110	562	9	Jinheung/23	Gaya	Silla	Gaya rebelled against Silla, and Silla suppressed them. Five-thousand Silla equestrians captured 200 Gaya people.
111	577	10	Jinji/2	Baekje	Silla	Baekje attacked Silla. Silla Killed 3700 Baekje warriors.
112	602	8	Jinpyung/24	Baekje	Silla	Baekje attacked Silla. Silla killed many Baekje warriors, but Silla lost two generals.
113	603	8	Jinpyung/25	Goguryo	Silla	Silla king defended Goguryo with 10,000 warriors.
114	604	8	Jinpyung/26	Silla	Baekje	Silla attacked Baekje.
115	608	2	Jinpyung/30	Goguryo	Silla	Goguryo attacked Silla's northern territory and captured 8000 people.
116	608	4	Jinpyung/30	Goguryo	Silla	Goguryo captured one Silla fortification.
117	611	10	Jinpyung/33	Baekje	Silla	Baekje surrounded one Silla fortification for 100 days and conquered it.
118	616	10	Jinpyung/38	Baekje	Silla	Baekje attacked one of Silla's fortifications.
119	618		Jinpyung/40	Silla	Baekje	Silla attempted to recapture one lost fortification, but failed.
120	623	10	Jinpyung/45	Baekje	Silla	Baekje attacked one Silla village.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
121	624	10	Jinpyung/46	Baekje	Silla	Baekje conquered six Silla fortifications.
122	626	8	Jinpyung/48	Baekje	Silla	Baekje conquered one of Silla's fortifications.
123	627	7	Jinpyung/49	Baekje	Silla	Baekje defeated two fortifications and captured 300 Silla people.
124	628	2	Jinpyung/50	Baekje	Silla	Baekje surrounded one Silla fortification, but Silla expelled them.
125	629	8	Jinpyng/51	Silla	Goguryo	Silla conquered one Goguryo fortification and killed 5000 Goguryo warriors.
126	633	8	Sunduk/2	Baekje	Silla	Baekje attacked the western territory of Silla.
127	636	5	Sunduk/5	Baekje	Silla	Baekje ambushed one Silla fortification with 500 warriors, Silla killed all of the Baekje Warriors.
128	638	10	Sunduk/7	Goguryo	Silla	Goguryo attacked one Silla fortification in the north.
129	638	11	Sunduk/7	Silla	Goguryo	Silla killed many Goguryo warriors.
130	642	7	Sunduk/11	Baekje	Silla	Baekje king captured 40 Silla fortifications.
131	642	8	Sunduk/11	Baekje/ Goguryo	Silla	Baekje and Goguryo attempted to block Silla tribute route to Dang China.
132	642	8	Sunduk/11	Baekje	Silla	Baekje conquered one Silla fortification and killed many high Silla officials.
133	644	9	Sunduk/13	Silla	Baekje	Silla captured seven Baekje fortifications.
134	645	1	Sunduk/14	Baekje	Silla	Silla defeated Baekje.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
135	645	1	Sunduk/14	Baekje	Silla	Silla killed 2000 Baekje warriors.
136	645		Sunduk/14	Baekje	Silla	No details.
137	645	5	Sunduk/14	Dang/ Silla	Goguryo	When Dang China attacked Goguryo, Silla helped Dang with 30,000 warriors.
138	645	5	Sunduk/14	Baekje	Silla	In the mean time, Baekje captured seven Silla fortifications in the west.
139	647	10	Jinduk/1	Baekje	Silla	Baekje surrounded three Silla fortifications. The Silla king sent 10,000 infantrymen and equestrians to kill 3000 Baekje warriors.
140	648	3	Jinduk/2	Baekje	Silla	Baekje conquered ten Silla fortifications. Silla retaliated and killed almost all of the Baekje warriors.
141	649	8	Jinduk/3	Baekje	Silla	Baekje collapsed seven Silla fortifications. Ten days later, Silla retaliated, capturing several hundred, and killing 8980 warriors. Silla seized 10,000 horses and an equal number of weapons.
142	655	3	Muyeol/2	Goguryo/ Baekje/ Malgal	Silla	The allied countries captured Silla fortifications in the north.
143	659	4	Muyeol/6	Baekje	Silla	Baekje frequently attacked Silla territory.
144	660	5	Muyeol/7	Silla/ Dang	Baekje	Silla and Dang attacked Baekje. Dang deployed 130,000, and Silla sent 50,000 warriors to battle the Baekje Kingdom.
145	660	7	Muyeol/7	Silla/ Dang	Baekje	The allied forces captured 20 high officials of Baekje.
146	660	7	Muyeol/7	Silla/ Dang	Baekje	The allied forces defeated Baekje.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
147	660	9	Muyeol/7	Silla/ Dang	Baekje	Dang and Silla attacked Baekje. Dang deployed 10,000 warriors and Silla sent 7000 warriors. Dang captured 93 Baekje royal families and officials and 12,000 citizens to Dang.
148	660	9	Muyeol/7	Baekje	Silla/ Dang	Baekje rebelled against the Dang/Silla allied forces. Twenty Baekje fortifications cooperated.
149	660	10	Muyeol/7	Silla	Baekje	Silla destroyed Baekje and twenty other Baekje fortifications surrendered.
150	660	10	Muyeol/7	Silla	Baekje	Silla killed 1500 Baekje warriors.
151	660	11	Muyeol/7	Goguryo	Silla	Silla killed 700 Goguryo warriors.
152	661	2	Muyeol/8	Baekje	Silla	Baekje remnants attacked one of Silla's fortifications.
153	661	3	Muyeol/8	Silla	Baekje	Silla attacked one Baekje fortification. They could not win even after 36 days of battle.
154	661	4	Muyeol/8	Silla	Baekje	Silla drove Baekje out, but they lost a lot of weapons. Later Silla killed 2000 Baekje warriors.
155	661	5	Muyeol/8	Goguryo/ Malgal	Silla	The allied forces attacked two Silla fortifications. There were 2800 people in one of the fortifications.
156	661	9	Munmu/1	Silla	Baekje	Silla surrounded one Baekje fortification and killed several thousands of Baekje warriors.
157	661	9	Munmu/1	Silla	Baekje	Silla attacked one Baekje fortification and killed 1000 Baekje warriors.
158	662	1	Munmu/2	Silla	Goguryo	Silla killed many Goguryo warriors.
159	662	1	Munmu/2	Silla	Goguryo	Silla killed 10,000 Goguryo warriors and obtained several thousands of weapons.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
160	662	8	Murmu/2	Baekje	Silla	Baekje rebelled against Silla. Silla sent 19 generals to defeat them.
161	663	2	Murmu/3	Silla	Baekje	Silla took one fortification and killed 700 Baekje warriors.
162	663	2	Murmu/3	Silla	Baekje	Silla captured two Baekje fortifications.
163	663	2	Murmu/3	Silla	Baekje	Silla captured one Baekje fortification and killed 1070 warriors of Baekje.
164	663	5	Murmu/3	Baekje	Silla/ Dang	Silla and Dang defeated Baekje.
165	663	5	Murmu/3	Silla/ Dang	Baekje	Silla and Dang attacked Baekje. Dang sent 400,000 warriors and Silla sent 28 (or 30) generals and warriors.
166	663	10	Murmu/3	Silla	Baekje	Silla attacked one Baekje fortification, taking a month to capture it.
167	664	3	Murmu/4	Baekje	Silla	Baekje remnants rebelled in a fortification, Silla repressed them.
168	664	7	Murmu/4	Silla	Goguryo	Silla conquered one of Goguryo's fortification.
169	666	12	Murmu/6	Silla	Goguryo	Silla attacked Goguryo.
170	668	7	Murmu/8	Silla	Goguryo	Silla defeated Goguryo.
171	668	9	Murmu/8	Silla/ Dang	Goguryo	Dang captured the Goguryo royal families and 200,000 Goguryo citizens.
172	668	11	Murmu/8	Silla	Goguryo	Silla captured 7000 Goguryo people.
173	670	4	Murmu/10	Malgal	Silla/ Goguryo	Malgal invaded Silla. Silla sent 10,000 warriors, while Goguryo sent 10,000 to defeat Malgal. The allied forces defeated Malgal.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
174	670	7	Munmu/10	Silla	Baekje/ Wa	Silla took a total of 82 Baekje fortifications and killed 9000 warriors. Wa helped Baekje by sending 1000 battleships.
175	671	1	Munmu/11	Silla	Baekje	Silla attacked Baekje.
176	671	1	Munmu/11	Malgal	Silla	Silla killed 300 Malgal warriors.
177	671	6	Munmu/11	Silla	Baekje/ Dang	Silla killed 5300 allied forces, and captured two Baekje generals and six high Dang officers.
178	671	9	Munmu/11	Dang/ Malgal	Silla	Dang/Malgal allied forces with 40,000 warriors attacked Silla territory.
179	671	10	Munmu/11	Silla	Dang	Silla attacked 70 Dang transport-ships and captured 100 warriors. Countless numbers of Dang warriors were killed.
180	672	1	Munmu/12	Silla	Baekje	Silla conquered one of Baekje's fortifications.
181	672	2	Munmu/12	Silla	Baekje	Silla attacked one Baekje fortification, Silla did not win.
182	672	7	Munmu/12	Dang	Silla	Dang occupied Pyungyang with 40,000 warriors.
183	672	8	Munmu/12	Dang	Silla	Dang conquered many Silla fortifications.
184	672	8	Munmu/12	Silla	Goguryo	Silla killed several thousands of Goguryo warriors. Silla also lost many warriors.
185	673	9	Munmu/13	Dang/ Malgal/ Guhran	Silla	Silla fought against the allied forces nine times and killed 2000 allied warriors. Countless numbers of allied warriors were drowned.
186	673	W ^d	Munmu/13	Guhran/ Malgal	Silla	Guhran and Malgal collapsed two Silla fortifications.

No.	Year	Mo. ^a	King/ year	Polities involved in		Summary
				Offense	Defense	
187	674	1	Murmu/14	Dang	Silla	Dang attacked Silla.
188	675	2	Murmu/15	Dang	Silla	Dang defeated Silla at a fortification.
189	675	9	Murmu/15	Dang	Silla	Dang attacked one Silla fortification, but Silla defeated Dang, killing 1400 warriors, and capturing 40 battleships, and 1000 horses.
190	675	9	Murmu/15	Dang	Silla	Dang occupied one Silla fortification. Silla defeated them, capturing 30,380 horses and equivalent number of weapons.
191	675	9	Murmu/15	Malgal	Silla	Malgal collapsed one Silla fortification. The lord of the Silla fortification died.
192	675		Murmu/15	Dang/ Guhran/ Malgal	Silla	The allied forces surrounded one Silla fortification. They did not win, Silla lost one officer.
193	675		Murmu/15	Malgal	Silla	Malgal surrounded one of Silla's fortifications. Silla lost one administrator and people.
194	675		Murmu/15	Dang	Silla	Silla battled with Dang 18 times. Silla won all, killing 6047 warriors, and capturing 200 horses.
195	676	7	Murmu/16	Dang	Silla	Dang conquered one Silla fortification. One Silla administrator was killed.
196	676	11	Murmu/16	Dang	Silla	Silla battled with Dang 22 times. Silla won all and killed 4000 Dang warriors.
197	731	4	Sunduk/30	Japan ^e	Silla	Japan attacked Silla with 300 battleships.
198	732	7	Sunduk/32	Balhae/ Malgal.	Dang	Silla helped Dang and attacked Malgal

- a. Lunar calendar
- b. Ancient Japan
- c. Summer
- d. Winter
- e. They renamed their country in 670.

APPENDIX B

SILLA BURIAL DATA: PART A

VARIABLE LABELS

V1 "NAME OF SITE"
V2 "BURIAL NUMBER"
V3 "BURIAL TYPE"
V4 "BURIAL ORIENTATION"
V5 "STATE OF BURIAL"
V6 "PRESENCE OF SKELETAL REMAINS"
V7 "SEX"
V8 "AGE"
V9 "BURIAL LENGTH"
V10 "BURIAL WIDTH"
V11 "BURIAL DEPTH"
V12 "BURIAL SIZE"
V13 "BURIAL VOLUME"
V14 "INITIAL DATE"
V15 "TERMINAL DATE"
V16 "SOURCE OF DATE"
V17 "POTTERY"
V18 "BRONZE MIRROR"
V19 "BRONZE DAGGER"
V20 "BRONZE SPEARHEAD"
V21 "BRONZE ARROWHEAD"
V22 "BRONZE BELL/ HORSEBELL"
V23 "BRONZE BUCKLE"
V24 "BRONZE ORNAMENT"
V25 "BRONZE DAGGER HILT"
V26 "BRONZE AXE/HALBERD"
V27 "UNIDENTIFIED BRONZE ARTIFACT"
V28 "IRON ARROWHEAD"/
V29 "IRON SPEARHEAD"
V30 "IRON AXE/HALBERD"
V31 "IRON KNIFE"

V32 "IRON SWORD WITH/WITHOUT POMMEL"
 V33 "IRON DAGGER"
 V34 "IRON CHISEL"
 V35 "IRON SICKLE"
 V36 "IRON NAIL/CLAMP"
 V37 "IRON BARBED/HOOKED KNIFE"
 V38 "IRON INGOT"
 V39 "IRON TRIFURCATED SPEARHEAD"
 V40 "IRON HELMET"
 V41 "IRON/GILT BRONZE HORSERIDING EQUIPMENT"
 V42 "IRON ARMOUR"
 V43 "IRON HORSE CHAMFRON"
 V44 "IRON SPADE"
 V45 "IRON PIN"
 V46 "IRON/BRONZE/SILVER QUIVER EQUIPMENT"
 V47 "BEAD"
 V48 "UNIDENTIFIED/UTILITARIAN IRON ARTIFACT"
 V49 "SPINDLE WHORL"
 V50 "GILT BRONZE ARTIFACT"
 V51 "JADE"
 V52 "TRADED/INTRUSIVE ARTIFACT"
 V53 "SILVER ARTIFACT"
 V54 "GOLD ARTIFACT"
 V55 "SERIAL NUMBER"
 V56 "PRESENCE OF SUBORDINATE CHAMBER FOR GRAVE GOODS".

VALUE LABELS

V1

"WS" "WOLSUNG, GYUNGJU"	"ID" "IMDANG, GYUNGSAN"
"PD" "PALDAL, DAEGU"	"YD" "YANGDONG, GIMHAE"
"JY" "JOYANG, GYUNGJU"	"DH" "DAHORI, EUICHANG"
"NP" "NOPODONG, BUSAN"	"JP" "JUHPORI, HABCHUN"
"EE" "EUHEUN, YOUNGCHUN"	"MC" "MANCHONDONG, DAEGU"
"DR" "DAERI, EUISUNG"	"JR" "JANGRIM, EUISUNG"
"JT" "JOTABDONG, ANDONG"	"DG" "DOGEDONG, CHANGWON"
"YA" "YEANRI, GIMHAE"	"BC" "BOKCHUNDONG, BUSAN"
"JS" "JISANDONG, GORYUNG"	"HD" "HYUNDONG, MASAN"
"IS" "IBSILRI, GYUNGJU"	"GJ" "GUJUNGDONG, GYUNGJU"
"PR" "PYUNGRI, GYUNGJU"	"JD" "JUKDONRI, GYUNGJU"
"HW" "HWANGSUNG, GYUNGJU"	"JG" "JUNGRAE, GYUNGJU"

"HN" "HWANGNAM, GYUNGJU" "IN" "INWANGDONG, GYUNGJU"

V3

"P" "PIT BURIAL"

"C" "PIT BURIAL WITH WOODEN COFFIN"

"M" "PIT BURIAL WITH WOODEN(LOG-LINED) CHAMBER"

"W" "STONE-COMPILED WOODEN CHAMBER"

"F" "STONE-COMPILED WOODEN COFFIN"

"S" "STONE LINED TOMB"

"J" "JAR COFFIN"

"L" "STONE LINED CHAMBER TOMB"

"U" "UNIDENTIFIED TOMB"

V4

"N" "NORTH-SOUTH"

"E" "EAST-WEST"

"W" "SOUTHWEST-NORTHEAST"

"S" "SOUTHEAST-NORTHWEST"

"U" "UNIDENTIFIED"

V5

"I" "INTACT"

"C" "CULTURAL FORMATION PROCESSES-CONSTRUCTIONS,
OVERLAPPING"

"N" "NATURAL FORMATION PROCESSES-EROSION, ROOTS"

"P" "PARTIALLY EXCAVATED"

"U" "UNKNOWN"

"L" "LOOTED"

V6

"A" "ABSENT"

"P" "PRESENT"

"M" "MULTIPLE BURIAL"

V7

"F" "FEMALE"

"M" "MALE"

"I" "INDETERMINATE"

V8

"C" "CHILD (1-12)"

"A" "ADOLESCENT (12-20)"

"Y" "YOUNG ADULT(20-35)"

"M" "MIDDLE ADULT (35-50)"

"O" "OLD ADULT (50+)"

"I" "INDETERMINATE"

V16

"P" "POTTERY TYPE"

"M" "BRONZE MIRROR/DAGGER"

"C" "CHINESE COIN"
"T" "TOMB TYPE"
"I" "IRON WEAPON TYPE"
"B" "CARBON 14"
"S" "STRATIGRAPHY"
"U" "UNKNOWN"

V47

"N" "0"
"A" "1-30"
"B" "31-60"
"C" ">60"

V56

"A" "ABSENT"
"P" "PRESENT"

APPENDIX B

SILLA BURIAL DATA: PART B

DATA ENTRY

Note: Each case is composed of 56 variables (see PART A). All data is entered in two rows with a case number appearing in the first column.

```

001 WS GA01 W E C A      2.7 1.9 0.9 5.1 4.3 450 550 T 60 0 0 0 0 0 0 0 0 0 0 6
  0 2 1 0 0 0 1 3 1  4 0 0 13 0 0 0 0 0 N  3 0 2 0 0 0  0 P
002 WS GA02 W E C A      350 450 T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 1 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
003 WS GA03 W E P A      350 450 T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
004 WS GA04 W N P A      3.7 1.3      4.8      400 500 T 30 0 0 0 0 0 0 0 0 0 0 0
  0 0 1 0 0 0 0 1 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 2  0 A
005 WS GA5" W E P A      350 450 P 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  2 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 2 0  2 A
006 WS GA05 W E P A      2.1 0.6      350 450 P 17 0 0 0 0 0 0 0 0 0 0 0 12
  0 1 0 0 0 0 0 1 0  0 0 0 0  1 0 0 0 0 0 N  0 0 0 0 0 0  0 A
007 WS GA06 W E C A      1.1      350 450 P 20 0 0 0 0 0 0 0 0 0 0 0 0
  30 16 0 1 0 0 0 4 0  25 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
008 WS GA08 W E C A      350 450 P 12 0 0 0 0 0 0 0 0 0 0 0 0 0
  0 1 0 0 0 0 0 0 0  0 0 0 0  16 0 0 0 0 0 N  0 0 9 0 0 0  0 A
009 WS GA09 W W C A      2.3 1.5      3.5      350 450 P 8 0 0 0 0 0 0 0 0 0 0 0 0
  1 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
010 WS G10" W E C A      1.8 1.7      3.1      400 500 P 14 0 0 0 0 0 0 0 0 0 0 0 0
  1 1 0 1 0 0 0 0 0  0 0 0 0  1 0 0 0 0 0 N  0 0 0 0 0 0  0 A
011 WS G11' S E C A      2.0 0.8      400 500 P 32 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
012 WS G11" J N C A      350 450 P 11 0 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 A  0 0 0 0 0 0  0 A
013 WS GA12 W U P A      3.8      0.6      350 450 T 5 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  1 0 0 0 0 0 N  0 0 0 0 0 0  0 A
014 WS GA13 W E C A      3.5 2.4 0.9 8.4 7.6 400 500 P 59 0 0 0 0 0 0 0 0 0 0 0 3
  3 1 0 9 1 0 0 0 0  0 0 0 0  0 0 0 0 0 0 C  0 0 276 0 1 131 A
015 WS G13' S E C A      450 550 P 19 0 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
016 WS G13" S E C A      U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
017 WS GA14 U U C A      1.2      U 9 0 0 0 0 0 0 0 0 1 0 0 0 0
  0 1 2 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 1 0 0 0 0  0 A
018 WS GA15 S E I A      2.6 0.6 0.6 1.6 0.9 400 500 P 21 0 0 0 0 0 0 0 2 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 1  0 P
019 WS GA16 P U P A      300 400 T 1 0 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
020 WS GA18 S N P A      400 500 P 18 0 0 0 0 0 0 0 0 0 0 0 0 0
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A
021 WS GA19 M U P A      400 500 P 21 0 0 0 0 0 0 0 0 0 0 0 0 2
  0 0 0 0 0 0 0 0 0  0 0 0 0  0 0 0 0 0 0 N  0 0 0 0 0 0  0 A

```


232	JS	4502	S	W	I	P	I	I	2.9	0.5	0.6	1.5	0.9	300	400	T	15	0	0	0	0	0	0	0	0	0	0	0	0	7		
		0	1	3	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
233	JS	4503	S	S	I	A			2.7	0.6	0.5	1.6	0.8	300	400	T	6	0	0	0	0	0	0	0	0	0	0	0	0	0		
		0	0	3	0	0	0	0	0	0	0	0	0	0	0	N	0	0	2	0	0	0	0	0	0	0	0	0	0	0		
234	JS	4504	S	E	I	A			2.3	0.4	0.4	1.0	0.3	300	400	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
235	JS	4505	S	W	I	A			2.5	0.6	0.5	1.4	0.6	300	400	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
236	JS	4506	S	W	I	A			2.7	0.6	0.4	1.6	0.6	300	400	T	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
237	JS	4507	S	W	I	A			2.1	0.6	0.3	1.2	0.3	300	400	T	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	3	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
238	JS	4508	S	N	I	A			2.2	0.5	0.4	1.1	0.4	300	400	T	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
239	JS	4509	S	N	I	A			2.6	0.5	0.4	1.2	0.5	300	400	T	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
240	JS	4510	S	N	I	A			2.9	0.6	0.6	1.7	1.0	300	400	T	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	2	0	0	0	0	0	0	0	0	0	0	0	N	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
241	JS	4511	S	N	L	A								300	400	T	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
242	YA	YA77	M	E	C	M			4.4	2.0	0.8	8.5	6.4	300	400	T	11	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
		1	2	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
243	YA	YA78	L	N	C	P	F	M	2.4	2.3		5.4		500	550	T	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	1	1	0	0	0	0	0	0	0	0	0	0	0	N	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
244	YA	YA80	L	U	C	P	I	I						500	550	T	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
245	YA	YA82	S	N	L	P	I	I	3.8	1.2		4.6		400	500	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
		0	0	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
246	YA	YA83	S	E	L	P	I	I	3.2	0.6	0.6	1.9	1.2	400	500	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
		0	0	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
247	YA	YA86	M	E	C	P	F	Y	3.3	1.6	0.6	5.2	3.1	300	400	S	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
248	YA	YA87	M	W	C	P	M	Y	3.7	1.8		6.7		300	400	S	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
		0	1	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
249	YA	YA90	M	E	C	P	F	M	3.8	2.0		7.6		300	400	S	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
		1	3	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
250	YA	YA94	S	E	C	P	F	M	2.4	0.7		1.6		400	500	S	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
251	YA	YA97	S	E	C	P	M	Y						400	500	S	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	B	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
252	YA	Y100	M	E	C	P	F	Y	4.3	2.3		9.9		300	400	T	13	0	0	0	0	0	0	0	0	0	0	0	0	0	15	
		0	5	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
253	YA	Y104	M	E	C	P	M	Y	4.6	2.8	0.9	12.7	11.6	300	400	P	15	0	0	0	0	0	0	0	0	0	0	0	0	0	31	
		1	2	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
254	YA	Y107	M	E	C	P	M	M	3.8	1.8		6.8		300	400	T	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
		1	2	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
255	YA	Y109	M	E	C	P	F	M	3.6	1.2	0.5	4.3	2.2	300	400	T	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
		0	1	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
256	YA	Y110	S	E	C	P	M	M	3.0	0.7	0.7	2.1	1.5	400	500	T	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
		1	1	0	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
257	YA	Y111	M	E	C	P	F	Y	3.4	1.8		6.3		400	500	T	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	1	0	0	0	0	0	0	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
258	YA	Y112	M	E	C	P	I	M	3.6	2.3		8.4		400	500	S	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		1	1	1	0	0	0																									

BIBLIOGRAPHY

- Adams, Robert McC
1966 *The Evolution of Urban Society*. Aldine, Chicago.
- Aikens, C. Melvin and Takayasu Higuchi
1982 *Prehistory of Japan*. Academic Press, New York.
- Anderson, David G.
1994 Factional Competition and the Political Evolution of Mississippian Chiefdoms in the Southeastern United States. In *Factional Competition and Political Development in the New World*, edited by Elizabeth M. Brumfiel and John W. Fox, pp. 61-76, Cambridge University Press, New York.
- Anderson, James N.
1973 Ecological Anthropology and Anthropological Ecology. In *Handbook of Social and Cultural Anthropology*, edited by John J. Honigmann, pp. 179-240. Rand McNally, Chicago.
- Anderson, P.
1974 *Lineages of the Absolute State*. NLB, London.
- Azumausio and Dosiaki Tanaka
1988 *Gangokuno Godai Iseke: Shiragi (Keishu)* [Archaeological Sites in Korea: Silla Section (Gyungju)]. Chuou Kouron Sha, Tokyo.
- Barnes, Gina L.
1983 State Formation in the Southern Korean Peninsula: A Critical Review. *Archaeology in Korea: An Annual Review* 10:40-51.
- 1986 Jiehao, Tonghao: Peer Relations in East Asia. In *Peer Polity Interaction and Socio-political Change*, edited by Colin Renfrew and John F. Cherry, pp. 79-91. Cambridge University Press, New York.
- 1988 *Protohistoric Yamato: Archaeology of the First Japanese State*. The University of Michigan Center for Japanese Studies, Michigan Papers in Japanese Studies, No. 17. Ann Arbor, Michigan.

1990 Early Korean States: A Review of Historical Interpretation. In *Hoabinhian Jomon, Yayoi Early Korean States: Bibliographic Reviews of Far Eastern Archaeology 1990*, edited by Gina L. Barnes, pp. 113-153. Oxbow Books, Oxford.

1993 *China, Korea, and Japan: The Rise of Civilization in East Asia*. Thames and Hudson, London.

Bell, James

1991 Anarchy and Archaeology. In *Processual and Postprocessual Archaeologies: Multiple Ways of Knowing the Past*, edited by Robert W. Preucel, pp. 71-80. Center for Archaeological Investigations, Occasional Paper No. 10. Southern Illinois University, Carbondale.

Binford, Lewis R.

1964 A Consideration of Archaeological Research Design. *American Antiquity* 29:425-441.

1965 Archaeological Systematics and the Study of Cultural Process. *American Antiquity* 31:203-210.

1968 Archaeological Perspectives. In *New Perspectives in Archaeology*, edited by Sally R. Binford and Lewis R. Binford, pp. 5-32. Aldine, New York.

1971 Mortuary Practices: Their Study and Their Potential. In *Approaches to the Social Dimensions of Mortuary Practices*, edited by James A. Brown, pp. 6-29. *Memoirs of the Society for American Archaeology*, No. 25. Society for American Archaeology.

1972 *Archaeological Perspective*. Seminar Press, New York.

Braun, David P.

1979 Illinois Hopewell Burial Practices and Social Organization: A Reexamination of the Klunk-Gibson Mound Group. In *Hopewell Archaeology: The Chillicothe Conference*, edited by D. Brose and N. Greber, pp. 66-79. Cleveland Museum of Natural History and Kent State University Press, Kent, Ohio.

Braun, David P. and Stephen Plog

1982 Evolution of "Tribal" Social Networks: Theory and Prehistoric North American Evidence. *American Antiquity* 47:504-525.

Bray, Warwick and David Tramp

1978 *The Penguin Dictionary of Archaeology*. Penguin Books, New York.

Brown, James A.

1971 The Dimensions of Status in the Burials at Spiro. In *Approaches to the Social Dimensions of Mortuary Practices*, edited by James A. Brown, pp. 6-29. *Memoirs of the Society for American Archaeology*, No. 25. Society for American Archaeology.

1987 Quantitative Burial Analysis as Interassemblage Comparison. In *Quantitative Research in Archaeology*, edited by M. Aldenderfer, pp. 294-308. Sage Publications, Newbury Park.

Brumfiel, Elizabeth M.

1983 Aztec State Making: Ecology, Structure, and the Origin of the State. *American Anthropologist* 82:261-284.

1992 Breaking and Entering the Ecosystem-Gender, Class, and Faction Steal the Show. *American Anthropologist* 94:551-567.

Bungasai Ganligyoku Bungasai Gengyusho

1975 *Denmatsuga: Geishu-shi Ohnan-do Dai 155 Go Kofun Hakkutsu Chosa Hogokusho* [Heavenly Horse Tomb: Report on the Excavation of No. 155 Tomb at Hwangnam-dong]. Bungasai Ganligyoku Bungasai Gengyusho [Research Institute for Antiquities of Institute of Cultural Properties], Seoul.

Burling, Robbins

1974 *The Passage of Power: Studies in Political Succession*. Academic Press, New York.

Busan City Museum

1992 *Dongrae Bokchundong 53 Hobun* [Tomb Number 53 at Bokchundong, Dongrae]. Busan City Museum Archaeological Site Investigation Report No. 6. Busan City Museum, Busan, Korea.

Busan University Museum

1990 *Dongrae Bokchundong Gobungun II* [Tomb Cluster II Bokchundong, at Dongrae]. Busan University Museum Archaeological Investigation Report No. 14. Busan, Korea.

- 1993 *Gimhae Yeanri Gobungun II* [Tomb Cluster II in Yeanri at Gimhae]. Busan University Museum Archaeological Investigation Report No. 15. Busan, Korea.
- Buta, Gonan
 1980 Josen no Gotga Gesei to Sangoku [The Formation of the State and the Three Kingdoms in Korea]. In *Sin Josensa Newmon* [Introduction to New Korean History], edited by Society for the Study of Korean History, pp. 79-105. Ryogei Press, Tokyo.
- Butzer, Karl W.
 1982 *Archaeology as Human Ecology*. Cambridge University Press, New York.
- Carneiro, Robert L.
 1970 A Theory of the Origin of the State. *Science* 169:733-738.
 1972 From Autonomous Villages to the State: A Numerical Estimation. In *Population Growth: Anthropological Implications*, edited by Brian Spooner, pp. 64-77. MIT Press, Cambridge, Massachusetts.
 1981 The Chiefdom: Precursor of the State. In *The Transition to Statehood in the New World*, edited by Grant D. Jones and Robert R. Kautz, pp. 37-79. Cambridge University Press, New York.
 1988 The Circumscription Theory. *American Behavioral Scientist* 31:497-511.
 1990 Chiefdom-Level Warfare as Exemplified in Fiji and the Cauca Valley. In *The Anthropology of War*, edited by Jonathan Haas, pp. 190-211. Cambridge University Press, New York.
- Carroll, John B.
 1961 The Nature of Data, or How to Choose a Correlation Coefficient. *Psychometrika* 26:347-372.
- Chagnon, Napoleon A.
 1983 *Yanomamö: The Fierce People*. 3rd ed. Holt, Rinehart and Winston, New York.

Champion, Timothy

- 1982 Fortification, Ranking and Subsistence. In *Ranking, Resource and Exchange: Aspects of the Archaeology of Early European Society*, edited by Colin Renfrew and Stephen Shennan, pp. 61-66. Cambridge University Press, New York.

Chang, Kwang C.

- 1980 *Shang Civilization*. Yale University Press, New Haven.
- 1981 Archaeology and Chinese Historiography. *World Archaeology* 13:156-169.
- 1986 *The Archaeology of Ancient China*. 4th ed. Yale University Press, New Haven.

Chapman, Robert, Ian Kinnes, and Klavs Randsborg (editors)

- 1981 *The Archaeology of Death*. Cambridge University Press, New York.

Charlton, Thomas H.

- 1981 Archaeology, Ethnohistory, and Ethnology: Interpretive Interfaces. In *Advances in Archaeological Method and Theory*, vol. 4, edited by Michael B. Schiffer, pp. 129-176. Academic Press, New York.

Chen, Shou

- 1987 [3rd C. A.D.] San quo chi [The History of the Three Kingdoms], in *Jungguk Jungsa Josunjeon* [Josun Section in Chinese Standard History], compiled by Committee of the Korean National History Compilation, pp. 177-290. Chunpung Press, Seoul.

Cherry, John F.

- 1986 Politics and Palaces: Some Problems in Minoan State Formation. In *Peer Polity Interaction and Sociopolitical Change*, edited by Colin Renfrew and John F. Cherry, pp. 19-45. Cambridge University Press, New York.

Childe, V. Gordon

- 1942 [1964] *What Happened in History*. paperback ed. Penguin Books, Harmondsworth.

Chin, Hong-Sup

- 1975 *Jotap-dong Gobun Balgul Josa Bogo* [Excavation of Old Tomb at Jotap-dong]. Research Report of Antiquities. Ewha Women's University Museum, Seoul.

Choe, Chong-Pil

- 1982 The Diffusion Route and Chronology of Korean Plant Domestication. *Journal of Asian Studies* 41:519-529.

Choe, Young-ho

- 1980 An Outline History of Korean Historiography. *Korean Studies* 4:1-27.

Choi, Byung-Hyun

- 1981 Go Silla Juksuk Mokgwak Bun Eui Byunchun Gwa Pyunyeon [The Evolution and Chronology of the Stone Compiled with Wooden Chamber Tombs of Old Silla Period]. *Hanguk Gogo Hakbo* [Journal of the Korean Archaeological Studies] 10·11:138-228.

- 1992 *Silla Gobun Yeongu* [A Study of Silla Tomb]. Ilji Press, Seoul.

- 1993a Jae Palhoe Hanguk Sanggosahakhoe Haksul Balpyohoe: Gaya Gukga Baldalsa [The Eighth Symposium with the Topic of the Development of Kaya State]. *Hanguk Sanggosa Hakbo* [Journal of Korean Ancient Historical Society] 13:321-338.

- 1993b Silla Gobun Pyunyun Eui Jaemunjae: Gyungju · Wolsungro · Bokchundong · Daesungdong Gobun Eui Sangdae Pyunyun Eul Jungsimeuro [Some Problems in Chronology of Ancient Silla Tombs]. *Hanguk Gogo Hakbo* [Journal of the Korean Archaeological Society] 30:101-143.

Choi, Jong-gyu

- 1979a Gyungju Joyangdong Gobun Balgul Gaebo [A Preliminary Report of Burial Excavation at Gyungju Joyangdong]. *Bakmulgwan Sinmun* [Museum Newspaper] No. 96:2. National Central Museum, Seoul.

- 1979b Gyungju Joyangdong Gobungun E-cha Josa Balgul Gaebo [A Preliminary Report of Burial Excavation at Gyungju Joyangdong, No. 2]. *Bakmulgwan Sinmun* [Museum Newspaper] No. 100:3. National Central Museum, Seoul.

- 1981 Gyungjusi Joyangdong Sam-cha Josa Gaebo [A Preliminary Report of Burial Excavation at Gyungju Joyangdong, No. 3]. *Bakmulgwan Sinmun* [Museum Newspaper] No. 114:4 National Central Museum, Seoul.
- 1982 Joyangdong Togwangmyogun Jae Sacha Balgul [Joyangdong Pit-Burial Cluster, the Fourth Excavation]. In *Bakmulgwan Sinmun* [Museum Newspaper] No. 126:4. National Central Museum, Seoul.
- 1983 Junggi Gobun Eui Sunggyuk Ae Daehan Yakgan Eui Gochal [Some Examinations of the Characteristics of Middle Age Tomb]. *Budae Sahak* [Busan University History] 7:1-45.

Choi, Mong-lyong

- 1983 *A Study of the Youngsan River Valley Culture*. Unpublished Ph.D. dissertation, Department of Anthropology, Harvard University. University Microfilms, Ann Arbor.
- 1985 Godae Gukga Sungjang Gwa Muyeok: Wiman Josun Eui Ye [Development of the Ancient State and Trade: Example of Wiman Josun]. In *Hanguk Godae Eui Gukga Wa Sahoe* [State and Society in Ancient Korea], edited by Yeoksa Hakhoe, pp. 57-76. Ilchokak, Seoul.
- 1987 *Hanguk Godaesa Eui Jemunje* [Problems with Korean Ancient History]. Gwanaksa, Seoul.
- 1990 Jeonnam Jibang Samguk Sidae Jeongi Eui Gogohak Yeongu Hyunhwang [Aspect in the Studies of the Former Three Kingdoms Period in Jeolla-Nam-Do Province]. *Hanguk Gogo Hakbo* [Journal of the Korean Archaeological Society] 24:29-47.
- 1992 Trade in Wiman State Formation. In *Pacific Northeast Asia in Prehistory: Hunter-Fisher-Gatherers, Farmers, and Sociopolitical Elites*, edited by C. Melvin Aikens and Song-nai Rhee, pp. 185-189. Washington State University Press, Pullman.

Choi, Sung-rak

- 1982 Bangsasun Tanso Cheukjung Yeondae Munjae Eui Gumto [A Study of Some Problems Related to Radiocarbon Dates in Korea]. *Hanguk Gogo Hakbo* [Journal of the Korean Archaeological Society] 13:61-95.

- 1989 Hanguk Gogohak Ae Iseoseo Yeondae Munjae [Chronology in Korean Archaeology]. *Hanguk Gogo Hakbo* [Journal of the Korean Archaeological Society] 23:5-20.

Choo, Youn-sik

- 1991 *Perforated Clay Cylindrical Objects, Net Sinkers, Bottom Set Gill Nets, Fishing Behavior and Daily Subsistence: The Use of Culturally Specific and Relational Analogies in Archaeological Reasoning*. Unpublished Master's thesis, Department of Archaeology, Cambridge University, Cambridge.
- 1994 Suh Pyung [Book Review]. Gina L. Barnes *Juh China, Korea and Japan: The Rise of Civilization in East Asia*. *Hanguk Gogo Hakbo* [Journal of the Korean Archaeological Society] 31:341-354.

Chun, Gwan-woo

- 1976a Samhan Eui Gukga Hyungsung (sang) [State Formation of the Three Han (top)]. *Hanguk Hakbo* [Korean Journal] 2:2-46.
- 1976b Samhan Eui Gukga Hyungsung (ha) [State Formation of the Three Han (bottom)]. *Hanguk Hakbo* [Korean Journal] 3:112-156.
- 1976c Jin·Byun Han Jaeguk Eui Wichi Siron [A Preliminary Study on the Locations of Jin·Byun Han Countries]. *Baeksan Hakbo* [Baeksan Journal]: 217-266.

Claessen, Henri J. M. and Peter Skalník

- 1978a Theories and Hypothesis. In *The Early State*, edited by Henri J. M. Claessen and Peter Skalník, pp. 3-29. Mouton, Hague.
- 1978b Limits: Beginning and End of the Early State. In *The Early State*, edited by Henri J. M. Claessen and Peter Skalník, pp. 619-635. Mouton, Hague.

Clunie, Fergus

- 1977 *Fijian Weapons & Warfare*. Bulletin of the Fiji Museum. Fiji Times & Herald, Suva, Fiji.

Cohen, Ronald

- 1978a Introduction. In *Origins of the State: The Anthropology of Political Evolution*, edited by Ronald Cohen and Elman R. Service, pp. 1-20. Institute for the Study of Human Issues, Philadelphia.

- 1978b State Origins: A Reappraisal. In *The Early State*, edited by Henri J. M. Claessen and Peter Skalník, pp. 31-75. Mouton, Hague.
- 1984 Warfare and State Formation: Wars Make States and States Make Wars. In *Warfare, Culture, and Environment*, edited by R. Brian Ferguson, pp. 329-358. Academic Press, New York.
- Conrad, Geoffrey W.
- 1981 Cultural Materialism, Split Inheritance, and the Expansion of Ancient Peruvian Empires. *American Antiquity* 46:3-26.
- Cowgill, George L.
- 1975 On Causes and Consequences of Ancient and Modern Population Changes. *American Anthropologists* 77:505-525.
- Creamer Winfred and Jonathan Haas
- 1985 Tribe Versus Chiefdom in Lower Central America. *American Antiquity* 50:738-754.
- Davis, John
- 1986 *Statistics and Data Analysis in Geology*. 2nd ed. John Wiley&Sons, New York.
- Downing, Theodore E. and McGuire Gibson (editors)
- 1974 *Irrigation's Impact on Society*. Anthropological Papers of the University of Arizona Number 25. The University of Arizona Press, Tucson, Arizona.
- Drennan, Robert D. and Carlos A. Uribe
- 1987 Introduction. In *Chiefdoms in the Americas*, edited by Robert D. Drennan and Carlos A. Uribe, pp. viii-xii. University Press of America, New York.
- Dumond, Don E.
- 1965 Population Growth and Cultural Change. *Southwestern Journal of Anthropology* 21(4):302-324.
- 1972 Population Growth and Political Centralization. In *Population Growth: Anthropological Implications*, edited by Brian Spooner, pp. 286-310. MIT Press, Cambridge, Massachusetts.

Dunnell, Robert C.

- 1980 Evolutionary Theory and Archaeology. In *Advances in Archaeological Method and Theory*, vol. 3, edited by Michael B. Schiffer, pp. 35-99. Academic Press, New York.

Earle, Timothy K.

- 1978 *Economic and Social Organization of a Complex Chiefdom: The Halelea District, Kaua'i, Hawaii*. Anthropological Papers, Museum of Anthropology, University of Michigan No. 63. Ann Arbor, Michigan.
- 1987 Chiefdoms in Archaeological and Ethnohistorical Perspective. *Annual Review of Anthropology* 16:279-308.

Earle, Timothy K. and Robert W. Preucel

- 1987 Processual Archaeology and the Radical Critique. *Current Anthropology* 28:501-538.

Eckert, Carter J., Ki-baik Lee, Young-ick Lew, Michael R. and Edward W. Wagner

- 1990 *Korea Old and New: A History*. Korea Institute, Harvard University, Ilchokak, Seoul.

Edwards, Walter

- 1983 Event and Process in the Founding of Japan: The Horserider Theory in Archaeological Perspective. *Journal of Japanese Studies* 9(2):265-295.

Egami, Namio

- 1967 *Gima Minjoku Gotga: Approach to Nihon Godaisi* [State of Horseriding People: Approach to Ancient History of Japan]. Jugou Sinsiu, Tokyo.

Eighmy, Jeffrey L. and Jerry B. Howard

- 1991 Direct Dating of Prehistoric Canal Sediments Using Archaeomagnetism. *American Antiquity* 56:88-102.

Engles, Frederic

- 1972 [1891] *The Origins of the Family, Private Property, and the State*. International Publishers, New York.

Euisung County History Compilation

- 1986 Euisung Gunsu [History of Euisung County]. Euisung County History Compilation, Euisung, Korea.

Falkenhausen, Lothar Von

- 1993 On the Historiographical Orientation of Chinese Archaeology. *Antiquity* 67:839-849.

Feinman Gary and Jill Neitzel

- 1984 Too Many Types: An Overview of Sedentary Prestate Societies in the Americas. In *Advances in Archaeological Method and Theory*, vol. 7, edited by Michael B. Schiffer, pp. 39-102. Academic Press, New York.

Ferguson, Brian R.

- 1990 Explaining War. In *The Anthropology of War*, edited by Jonathan Haas, pp. 26-55. Cambridge University, New York.

Ferrie, Helke

- 1995 A Conversation with K. C. Chang. *Current Anthropology* 36:307-325.

Flannery, Kent V.

- 1972 The Cultural Evolution of Civilizations. *Annual Review of Ecology and Systematics* 3:399-426.

- 1976 *The Early Mesoamerican Village*. Academic Press, New York.

Fried, Morton H.

- 1960 On the Evolution of Social Stratification and the State. In *Culture in History: Essays in Honor of Paul Radin*, edited by S. Diamond, pp. 713-731. Columbia University Press, New York.

- 1967 *The Evolution of Political Society: An Essay in Political Anthropology*. Random House, New York.

Friedman, Jonathan

- 1974 Marxism, Structuralism, and Vulgar Materialism. *Man* 9:444-469.

- 1984 Tribes, States, and Transformations. Translated by Jonathan Friedman. In *Marxist Analyses and Social Anthropology*, edited by M. Bloch, pp. 161-202. Tavistock, London.

Friedman, Jonathan and Michael J. Rowlands

- 1978 Notes Towards an Epigenetic Model of the Evolution of Civilization. In *The Evolution of Social Systems*, edited by Jonathan Friedman and Michael J. Rowlands, pp. 201-276. University of Pittsburgh Press, Pittsburgh.

Fujii, Kazuo

- 1979 Keishu Koshiragi Kofun Henen Shian-Shutsudo Shiragi Dokio Chushin Toshite [A Tentative Proposal of Chronology of the Old Silla Tomb-Based on Discovered Potteries]. *Kanagawa Kogo* [Kanagawa Archaeology] 6:121-170.
- 1980 Rakutoko Karyuiki Ittai Kofun Shutsudo Doki No Hennen-Yosatsu [A Chronology of the Pottery Discovered in the Tombs Located in the Lower Nakdong River-Preliminary Examination]. *Kanagawa Kogo* [Kanagawa Archaeology] 9:107-154.

Gardiner, Kenneth Herbert J.

- 1969 *The Early History of Korea: The Historical Development of the Peninsula up to the Introduction of Buddhism in the Fourth Century A.D.* Center of Oriental Studies in Association with the Australian National University Press. Australian National University Press, Canberra.

Gibson, Jon L.

- 1974 Aboriginal Warfare in the Protohistoric Southeast: An Alternative Perspective. *American Antiquity* 39:130-133.

Goldstein, Lynne G.

- 1980 *Mississippian Mortuary Practices: A Case Study of Two Cemeteries in the Lower Illinois Valley.* Northwestern University Archaeological Program, Evanston, Illinois.

Goody, Jackson

- 1966 Introduction. In *Succession to High Office*, edited by Jackson Goody, pp. 1-56. Cambridge University Press, New York.

Goryung County

- 1979 *Dae Gaya Gobun Balguljosa Bogosuh* [Archaeological Excavation Report of Big Gaya Tomb]. Goryung County, Goryung, Korea.

Grayson, James H.

- 1977 Mimana, a Problem in Korean Historiography. *Korea Journal* 17(8):65-69.

Greber, N.

- 1979 Variations in Social Structures of Ohio Hopewell Peoples. *Mid-Continental Journal of Archaeology* 4:36-78.

Gwon, Byung-tak

- 1970 Uljugun Dalchun Chul Sanup Eui Sajuk Yeongu (II)-Chulgi Sayong Eui Sigi Munje Rel Jungsimuro [Historical Study of the Iron Industry in Uljugun Dalchun-Focused on the Date of Iron Use]. *Silla · Gaya Munhwa* 2:177-205.

Gyemyung University Museum

- 1994 *Gaegyo Sasib Juyeon Giyeom Gumleng Songjukri Yujuk Teukbyul Jeon Dorok* [The 40th Founders Day of the University Catalogue: Special Exhibition of Relics Excavated from the Site of Songjuk-ri, Keumreung County]. Gyemyung University Museum, Daegu, Korea.

Gyeongju City History Compilation Committee

- 1971 *Gyeongju Siji* [History of Gyeongju City]. Seoul Press, Gyeongju, Korea.

Gyeongju County History Compilation Committee

- 1989 *Gyeongju Gansa* [History of Gyeongju County]. Gyeongju County History Compilation Committee, Gyeongju, Korea.

Gyeongju National Museum

- 1991 *Uljin Hupori Yujeok* [Archaeological Site at Hupori, Uljin]. Gyeongju National Museum, Gyeongju, Korea.

Gyeongju National Museum, Gyungbuk University Museum, and City of Gyeongju

- 1990 *Gyeongjusi Wolsunglo Gobungun* [Tomb Clusters in Wolsung Street, Gyeongju]. Maeil Press, Gyeongju, Korea.

Gyungnam University Museum

- 1993 *Changwon Dugchunri Yujeok* [Archaeological Site at Dugchunri, Changwon]. A Preliminary Report for Committee Meeting and Site Briefing. Gyungnam University Museum, Masan, Korea.

Haas, Jonathan

- 1982 *The Evolution of the Prehistoric State*. Columbia University Press, New York.
- 1984 The Exercise of Power in Early Andean State Development. In *The Origins and Development of the Andean State*, edited by Jonathan Haas, Shelia Pozorski, and Thomas Pozorski, pp. 31-35. Cambridge University Press, New York.
- 1992 Warfare and the Evolution of Tribal Polities in the Prehistoric Southwest. In *The Anthropology of War*, edited by Jonathan Haas, pp. 171-189. Cambridge University Press, New York.

Hallpike, C. R.

- 1973 Functionalist Interpretations of Primitive Warfare. *Man* 8:451-470.

Hardesty, Donald L.

- 1980 The Use of General Ecological Principles in Archaeology. In *Advances in Archeological Method and Theory*, vol. 3, edited by Michael B. Schiffer, pp. 158-187. Academic Press, New York.

Harner, Michael

- 1970 Population Pressure and the Social Evolution of Agriculturalists. *Southwestern Journal of Anthropology* 26:67-86.

Harris, Marvin

- 1971 *Culture, Man, and Nature*. Thomas Y. Crowell, New York.
- 1972 Warfare, Old and New. *Natural History* 81(3):18-20.
- 1977 *Carnivals and Kings*. Random House, New York.
- 1979 *Cultural Materialism*. Random House, New York.

Haselgrove, Colin

- 1982 Wealth, Prestige, and Power: The Dynamics of Late Iron Age Political Centralization in Southeast England. In *Ranking, Resource, and Exchange: Aspects of the Archaeology of Early European Society*, edited by Colin Renfrew and Stephen Shennan, pp. 79-88. Cambridge University Press, New York.

- 1987 Culture Process on the Periphery: Belgic Gaul and Rome During the Late Republic and Early Empire. In *Center and Periphery in the Ancient World*, edited by Michael Rowlands, Mogens Larsen, and Kristian Kristiansen, pp. 104-124. Cambridge University Press, New York.

Hassan, Fekri A.

- 1978 Demographic Archaeology. In *Advances in Archaeological Method and Theory*, vol. 1, edited by Michael B. Schiffer, pp. 49-103. Academic Press, New York.

- 1981 *Demographic Archaeology*. Academic Press, New York.

Hatada, Takashi

- 1979 An Interpretation of the King Kwanggaet'o Inscription. Translated by V. Dixon Morris. *Korean Studies* 3:1-17.

Helms, Mary W.

- 1994 Chiefdom Rivalries, Control, and External Contacts in Lower Central America. In *Factional Competition and Political Development in the New World*, edited by Elizabeth M. Brumfiel and John W. Fox, pp. 55-60. Cambridge University Press, New York.

Henthorn, William E.

- 1971 *A History of Korea*. The Free Press, New York.

Hill, James N.

- 1970 Systems Theory and the Explanation of Change. In *Explanation of Prehistoric Change*, edited by James Hill, pp. 59-103. University of New Mexico Press, Albuquerque.

- 1991 Archaeology and Accumulation of Knowledge. In *Processual and Postprocessual Archaeologies: Multiple Ways of Knowing the Past*, edited by Robert W. Preucel, pp. 42-53. Center for Archaeological Investigations, Occasional Paper No. 10. Southern Illinois University, Carbondale.

Hill, James N., and R. K. Evans

- 1972 A Model for Classification and Typology. In *Models in Archaeology*, edited by David L. Clarke, pp. 231-273. Methuen, London.

Hodder, Ian

- 1982a Theoretical Archaeology: A Reactionary View. In *Symbolic and Structural Archaeology*, edited by Ian Hodder, pp. 1-16. Cambridge University Press, New York.
- 1982b *The Present Past*. Pica Press, New York.
- 1984 Archaeology in 1984. *Antiquity* 58:25-32.
- 1987 The Contribution of the Long Term. In *Archaeology as Long-Term History*, edited by Ian Hodder, pp. 1-8. Cambridge University Press, New York.
- 1991 *Reading the Past: Current Approaches to Interpretation in Archaeology*. 2nd ed. Cambridge University Press, New York.

Hsu, C. Y., and K. M. Linduff

- 1988 *Western Chou Civilization*. Yale University Press, New Haven.

Huntington, Ellsworth

- 1915 *Civilization and Climate*. Yale University Press, New Haven.

Ikawa-Smith, Fumiko

- 1980 Current Issues in Japanese Archaeology. *American Scientist* 68 (2):134-145.
- 1982 Co-traditions in Japanese Archaeology. *World Archaeology* 13:296-309.
- 1990 L'idéologie de L'homogénéité Culturelle dans L'archéologie Préhistorique Japonaise. *Anthropologie et Sociétés* 14 (3):51-76.

Im, Chang-soon

- 1959 Jin Han Wechigo [A Study of Geographic Location of Jin Han]. *Sa Hak Yeongu* 6:1-25.

Im, Hyo-jae

- 1992 Prehistoric Rice Agriculture in Korea. In *Pacific Northeast Asia in Prehistory: Hunter-Fisher-Gatherers, Farmers, and Sociopolitical Elites*, edited by C. Melvin Aikens and Song-nai Rhee, pp. 157-160. Washington State University Press, Pullman.

Inoue, Hideo

- 1978 *Mimana Nihonbu To Wa* [Japanese Colonial Government in Imna and Ancient Japan]. Eirakusia, Tokyo.

Jechun·Jewon County History Compilation Committee

- 1988 *Jechun·Jewon Sa* [History of Jechun·Jewon]. Korea Press, Jechun, Korea.

Jeon, Hae-jong

- 1982 *Dong-i Jeon: Eui Munhunjuk Yeongu: Wiryak, Samgukji, Hu Han Suh Dong-i Gwangye Gisa Eui Gumto* [A Textual Study of Wiryak, Samgukji, Hu Han Suh: Examination of the Relationships of Dong-i Chronicles]. Ilchokak, Seoul.

Jochim, Michael A.

- 1979 *Breaking Down the System: Recent Ecological Approaches in Archaeology*. In *Advances in Archeological Method and Theory*, vol. 2, edited by Michael B. Schiffer, pp. 77-117. Academic Press, New York.

- 1981 *Strategies for Survival: Cultural Behavior in an Ecological Context*. Academic Press, New York.

Johnson, Gregory A.

- 1973 *Local Exchange and Early State Development in Southwestern Iran*. The University of Michigan Museum of Anthropology, Anthropological Papers, No. 51, Ann Arbor, Michigan.

Johnson, Allen W. and Timothy Earle

- 1987 *The Evolution of Human Societies: From Foraging Group to Agrarian State*. Stanford University Press, Stanford.

Joussaume, Roger

- 1988 *Dolmens for the Dead: Megalith-Building Throughout the World*. Translated by Anne and Christopher Chippindale. Cornell University Press, Ithaca, New York.

Ju, Bo-don

- 1990 *Hanguk Godae Gukga Hyungsung Ae Daehan Yeongusajuk Gumto* [Examination of the History of the State Formation in Ancient Korea]. In *Hanguk Godae Gukga Eui Hyungsung* [The State Formation in Ancient Korea], edited by the Committee of the Study of Ancient Korean History, pp. 221-246. Min Eum Sa, Seoul.

- Jung, Jang-ho
 1984 *Sinpyun Hanguk Jiri* [New Korean Geography]. Woosung Press, Seoul.
- Jung, Jing-won, Hyo-taik Im, and Gyung-chul Shin
 1981 *Gimhae Sugari Paechong* [Shell Midden at Gimhae]. Busan University Museum Archaeological Site Investigation Report No. 4. Busan University Museum, Busan, Korea.
- Jung, Jing-won and Gyung-chul Shin
 1983 *Dongrae Bokchundong Gobungun I* [Tomb Cluster at Bokchundong, Dongrae I]. Busan University Museum Archaeological Site Investigation Report No. 5. Busan University Museum, Busan, Korea.
- Jung, Young-hwa, Do-young Yang, Yong-sung Kim
 1987 *Habchun Juhpo Gobun A Balgul Josa Bogo* [Excavation Research Report of Tomb A at Juhpo, Habchun]. Youngnam University Museum Academic Research Report No. 8. Youngnam University Museum, Gyung-san, Korea.
- Kachigan, Sam K.
 1986 *Statistical Analysis: An Interdisciplinary Introduction to Univariate & Multivariate Methods*. Radius Press, New York.
- Kang, Bong Won
 1990 A Megalithic Tomb Society in Korea: A Social Reconstruction. M.A. thesis, Department of Anthropology, Arizona State University, Tempe, Arizona.
- 1992 A Reexamination of Korean Megalithic Tombs and Social Organization. Paper Presented at the 57th Annual Meeting of the Society for American Archaeology, Pittsburgh, Pennsylvania.
- 1993a Social Structure in a Megalithic Tomb Society in Korea. *Papers of the British Association for Korean Studies* 4:197-215.
- 1993b An Examination of an Intermediate Socioevolutionary Type Between Chiefdom and State. Paper Presented at the 58th Annual Meeting of the Society for American Archaeology, Saint Louis, Missouri.

- 1994 The Impact of Warfare in the Formation of Complex Societies in the Protohistoric Korean Peninsula. Paper Presented at the 59th Annual Meeting of the Society for American Archaeology, Anaheim, California.
- Kang, Hyung-tae, Youn-sik Choo, and Kyung-im Nah
- 1993 Bangsasun Tanso Yeondae Cheugjung Gwa Gojungmil Bojung Bangbub: Dongbuk Asia Gogohak Yeongurul Wehan Gijon ¹⁴C Yeondae Eui Bojung [Radiocarbon Dating and High-precision Bidecada Calibration: Calibration of Korean ¹⁴C Dates for Northeast Asian Archaeological Studies]. *Hanguk Gogo Hakbo* [Journal of the Korean Archaeological Society] 30:5-62.
- Kiley, Cornelius J.
- 1973 State and Dynasty in Archaic Yamato. *Journal of Asian Studies* 23:25-49.
- Kim, Bu-sik
- 1145 [1977] *Samguk Sagi*. 2nd ed. Gyungin Press, Seoul.
- Kim, Byung-mo
- 1982 A New Interpretation of Megalithic Monuments in Korea. In *Megalithic Cultures in Asia*, edited by Byung-mo Kim, pp. 164-189. Hanyang University Press, Seoul.
- Kim, Chang-ho
- 1983 Youngchun Jungje Be Jeongwon Sibsayeon Myung Eui Yeongu [A Reexamination of the Jeongwon 14th Year Inscription of the Cheonggje Stele in Youngcheon]. *Hanguksa Yeongu* [The Journal of Korean History] 43:115-130.
- 1987 Is it Possible That Terminus Post Quem of the Wooden Chamber Tombs of the Old Silla Goes Back Further Than the Fifth Century A.D.? *Yongnam Gogohak* [Yongnam Archaeological Review] 4:1-12.
- 1991 Gyungju Hwangnam-dong Baekho Bun (Gum Chong) Eui Jaegumto [Reexamination of the Gom-Chong (Sword Tomb) at Hwangnam-dong Gyungju]. *Hanguk Sanggosa Hakbo* 8:79-92.
- Kim, Che-won
- 1948 Ho-U Chong Gwa Eunlyung Chong [Two Old Silla Tombs: Ho-U Tomb and Silver Bell Tomb]. Report of the Research of Antiquities of the National Museum of Korea vol. I. Eul-yu Publishing, Seoul.

Kim, Chul-jun

- 1979 Goryo Sidae Yeoksa Insik Eui Byonchun: Jungsaе Munhwa Insikgwa Minjok Insik Eui Sungjang [The Transition of Historical Ideology During Korea Dynasty]. In *Hanguk Munhwasaron*, pp. 132-150. Jisik Sanupsa, Seoul.
- 1982 Hanguk Godae Gukga Baldalsa [The Development of Korean Ancient States]. In *Hanguk Munhwasa Daegye* [Outline of Korean Culture History], edited by Korea University National Culture Research Institute pp. 453-546. Korea University Press, Korea.

Kim, Jung-bae

- 1968 Sam Han Wechi Ae Daehan Jongraesul Gwa Munhwa Sunggyuk Eui Gumto [An Examination of Conventional Theory Concerning the Geographic Location of Sam Han and Its Cultural Character]. *Sahak Yeongu* 20:127-154.
- 1976 Jun Wang Mit Jin Guk Gwa Sam Han Jungtonglon Eui Jemunje: Iksan Eui Chungdonggi Munhwa Wa Gallyun Hayuh [Problems of King Jun, Jin State, and Theory of the Legitimacy of Sam Han: In Association with the Bronze Culture in Iksan]. *Hanguksa Yeongu* 13:3-28.
- 1983 *Hanguk Minjok Munhwa Eui Giwon* [The Origin of Korean Ethnical Group and Its Culture]. 5th ed. Korea University Press, Seoul.
- 1986 *Hanguk Godaeui Gugga Giwongwa Hyungsung* [The Origin and Formation of State in Ancient Korea]. Korea University Press, Seoul.

Kim, Jung-hak

- 1982a Godae Gukga Eui Baldal (Gaya) [The Development of the Primitive State, Gaya]. *Hanguk Gogo Hakbo* [Journal of the Korean Arcaeological Studies] 12:1-19.
- 1982b Hanguk Minjok Hyungsungsa [The Formation of Korean Ethnicity]. In *Hanguk Munhwasa Daegye* [Outline of Korean Culture History], vol. 1, Minjok-Gukgasa [History of Ethnicity and State], edited by Korea University Nationalistic Culture Research Institute, pp. 315-452. Korea University Press, Seoul.

Kim, Jung-hak and Jing-won Jung

- 1975 Michoo Wangleung Jigu Je Oh Guyeok (A Ho Pague Gobun) Balgul Josa Bogo [Excavation Report of the Tombs in King Michoo Tumulus Area No. 5]. In *Gyungju Jigu Gobun Balgul Josa Bogosuh Je Il Jib* [Excavation Report of Tombs in the Gyungju Area Vol. 1], edited by Institute of Cultural Properties, pp. 153-262. Munhwajae Galliguk Gyungju Sajuk Gwalli Samuso, Gyungju, Korea.

Kim, Jung-hak, Jing-won Jung, and Hyo-taek Im

- 1980 Michoo Wangleung Jigu Je Chil Jigu Gobun Balgul Josa Bogo [Excavation Report of the Tombs in King Michoo Tumulus Area No. 7]. In *Gyungju Jigu Gobun Balgul Josa Bogosuh Je E Jib* [Excavation Report of Tombs in the Gyungju Area Vol. 2], edited by Institute of Cultural Properties, pp. 9-130. Munhwajae Galliguk Gyungju Sajuk Gwalli Samuso, Gyungju, Korea.

Kim, Jung-ki

- 1974 Hanguk Soohyul Jooguhji Go (2) [A Study on Korean Semi-subterranean Houses-2]. *Gogohak* [Archaeology] 3:1-52.

Kim, Ki-woong

- 1968 Euisung Daeri Gobun Balgul Josa Bogo [Excavation Report of Tomb at Euisung Daeri]. *Sahak Yeongu* 20:87-109.

1976a *Siraki No Gofun* [Tomb of Silla]. Gakuseisha, Tokyo.

1976b Samguk Sidae Eui Moogi Sogo: Gogohak Jaryo Rul Jungsim Euro [A Study of Weapon of the Three Kingdoms Period: Focused on Archaeological Material]. *Hanguk Hakbo* 5:2-36.

1982 *Hanguk Eui Byukhwa Gobun* [Mural Paintings of Korea] Donghwa Press, Seoul.

Kim, Tae-sik

- 1990 Gaya Eui Sahoe Baljeon Dangye. In *Hanguk Godae Gukga Eui Hyungsung* [The State Formation in Ancient Korea], edited by the Committee of the Study of Ancient Korean History, pp. 39-103. Min Eum Sa, Seoul.

Kim, Taik-gyu and Eun-chang Lee

- 1975 *Hwangnamdong Gobun Balgul Josa Gaebo* [Report of the Excavation of the Tomb in Hwangnamdong]. Youngnam University Museum, Gyungnsan, Korea.

Kim, Won-yong

- 1967 Samguk Sidae Eui Gaesi Ae Gwanhan Ilgochal: *Samguk sagi* Wa Naklanggun Ae Daehan Jaegumto [A Study of the Formation Date of the Three Kingdoms: Reconsideration of the *Samguk sagi* and Naklang Commandery]. *Dong-A Munhwa* 7:1-33.
- 1969 Hanguk Gogohak Aesuheui Bangsasun Tanso Yeondae [C-14 Radiocarbon Dating in Korean Archaeology]. *Gogohak* [Archaeology] 2:1-16.
- 1981 *Hanguk Eui Misul: Silla Togi* [Art of Korea: Silla Pottery]. Yulhwadang, Seoul.
- 1982 Discoveries of Rice in Prehistoric Sites in Korea. *Journal of Asian Studies* 41:513-518.
- 1986 *Hanguk Gogohak Gaesul* [Introduction to Korean Archaeology]. Iljisa, Seoul.

Kipp, Rita S. and Edward M. Schortman

- 1989 The Political Impact of Trade in Chiefdoms. *American Anthropologist* 91:370-385.

Kirch, Patrick V.

- 1984 *The Evolution of the Polynesian Chiefdoms*. Cambridge University Press, New York.
- 1988 Circumscription Theory and Sociopolitical Evolution in Polynesia. *American Behavioral Scientist* 31:416-427.

Kirkland, J. Russell

- 1981 The "Horseriders" in Korea: A Critical Evaluation of a Historical Theory. *Korean Studies* 5:109-128.

Klymyshyn, Alexandra M. Ulana

- 1987 The Development of Chimu Administration in Chan Chan. In *The Origins and Development of the Andean State*, edited by Jonathan Haas, Shelia Pozorski, and Thomas Pozorski, pp. 97-110. Cambridge University Press, New York.

Korea National Geographic Survey

- 1992 Map of Gyungju (No. 107-2, scale 1:24,000). Korea National Geographic Survey, Seoul.

Ko, Byung-ik

- 1977 *Samguk sagi Ae Isosuh Eui Yeoksa Suhsul* [Historical Description in *Samguk sagi*]. In *Hanguk Eui Yeoksa Insik* [Understanding of History in Korea], edited by Woo-sung Yi and Man-gil Kang (bottom), pp. 51-55. Munhak Gwa Jisung Sa, Seoul.

Kristiansen, Kristian

- 1984 Ideology and Material Culture: An Archaeological Perspective. In *Marxist Perspectives in Archaeology*, edited by Matthew Spriggs, pp. 72-100. Cambridge University Press, New York.
- 1991 Chieftdoms, States, and Systems of Social Evolution. In *Chieftdoms: Power, Economy, and Ideology*, edited by Timothy Earle, pp. 16-43. Cambridge University Press, New York.

Kwon, Yi-gu, Do-young Yang, Yong-sung Kim, Yu-sin Kang, and Sang-ik Kim

- 1991 *Gyung-san Imdang Jiyeok Gobungun I: Joyoung 1A Jiyeok* [Tomb Cluster at Imdang Area, Gyung-san I: Joyoung 1A Area]. Youngnam University Museum Academic Research Report No. 12. Youngnam University Museum, Gyung-san, Korea.

Laffont, Robert

- 1966 *The Ancient Art of Warfare*. Barrie and Rockliff·The Cresset Press, London.

Larson, Jr. Lewis H.

- 1972 Functional Considerations of Warfare in the Southeast During the Mississippi Period. *American Antiquity* 37:383-392.

Lautensach, Hermann

- 1988 *Korea: A Geography Based on the Author's Travels and Literature*. Translated from the German, Supplemented with a Thoroughly Revised and Expanded Index and Edited by Katherine and Eckart Dege. Springer-Verlag, New York.

Ledyard, Gari

- 1975 Galloping Along with the Horseriders: Looking for the Founders of Japan. *Journal of Japanese Studies* 1(2):217-254.

Lee, Chong-sik

- 1983 History and Politics in Japanese-Korean Relations: The Textbook Controversy and Beyond. *Journal of Northeast Asian Studies* 2(4):69-93.

Lee, Chung-kyu and Chang-hwa Kang

- 1994 Jejudo Chulto Handae Hwapae Yumul Eui Han Ye [Newly Discovered Currencies from Che-ju Island]. *Hanguk Sanggosa Hakbo* 17:581-589.

Lee, Do-hack

- 1990 Baekje Eui Giwon Gwa Gukga Hyungsung Ae Gwanhan Jaegumto [Reexamination of the Origin of Baekje and State Formation]. In *Hanguk Godae Gukga Eui Hyungsung* [The State Formation in Ancient Korea], edited by the Committee of the Study of Ancient Korean History, pp. 105-170. Min Eum Sa, Seoul.

Lee, Eun-chang

- 1975 Michoo Wangleung Jigu Je Sib Guyeok Hwangnamdong Je Baeksib Ho Gobun Balgul Josa Bogo [Excavation Report of Tomb No. 110 in King Michoo Tumulus Area No. 10 at Hwangnamdong]. In *Gyungju Jigu Gobun Balgul Josa Bogosuh Je Il Jib* [Excavation Report of Tombs in the Gyungju Area Vol. 1], edited by Institute of Cultural Properties, pp. 289-396. Munhwajae Galliguk Gyungju Sajuk Gwalli Samuso, Gyungju, Korea.
- 1980 Michoo Wangleung Jigu Je Sa Jigu Gobungun (Hwangnamdong Michoo Wangleung Jeon Jiyeok A Jigu Balgul Josa Bogo [Excavation Report of the Tombs Located in Front of King Michoo Tumulus Area]. In *Gyungju Jigu Gobun Balgul Josa Bogosuh Je E Jib* [Excavation Report of Tombs in the Gyungju Area Vol. 2], edited by Institute of Cultural Properties, pp. 131-340. Munhwajae Galliguk Gyungju Sajuk Gwalli Samuso, Gyungju, Korea.

Lee, Hyun-hae

- 1984 *Sam Han Sahoe Hyungsung Gwajung Yeongu* [A Study on the Formation of the Sam Han Society]. Ilchokak, Seoul.

Lee, Jin-Hee

- 1980 *Gogaitoto Ou To Sichi Si Dou* [Stele of the King Gwanggaeto and Sword with Seven Branches]. Gakusei Sha, Tokyo.

Lee, Jong-Wook

- 1980 *Silla Sangdae Wangwe Gyeseung Yeongu* [A Study of the Kingship Succession in Old Silla]. Minjok Munhwa Chongsuh No. 7. Youngnam University Minjok Munhwa Yeonguso. Youngnam University Press, Gyungasan, Korea.
- 1982 *Silla Gukga Hyungsungsa Yeongu* [A Study in the Formation of the Silla State]. Ilchokak, Seoul.
- 1985 *Silla Golpumje Yeongu Eui Donghyang: Giwon Gwa Gujo Rul Jungsim Euro* [Trend of the Study for Silla Bone Rank System: Focused on the Origin and Structure]. In *Hanguk Godae Eui Gukga Wa Sahoe* [State and Society of Ancient Korea], edited by Yeoksa Hakhoe [Society for Korean History], pp. 203-244. Ilchokak, Seoul.

Lee, Ki-baek

- 1978 *Hanguk Sahak Eui Banghyang* [Direction of Korean History]. Ilchokak, Seoul.
- 1984 *Silla Jungchisa Yeongu* [A Study of Political History of Silla]. Ilchokak, Seoul.
- 1985 *Goguryo Eui Gukka Hyungsung Munjae* [Problem with State Formation in Goguryo]. In *Hanguk Godae Eui Gukka Wa Sahoe* [State and Society of Ancient Korea], edited by Yeoksa Hakhoe, pp. 77-91. Ilchokak, Seoul.
- 1986 *A New History of Korea*. Translated by Edward W. Wagner with Edward J. Shultz. Ilchokak, Seoul.
- 1990 *Hanguksa Sillon*. [A New History of Korea]. new ed. Ilchokak, Seoul.

Lee, Ki-baek and Ki-dong Lee

- 1984 *Hanguksa Gangjua* [Seminar on Korean History]. Ilchokak, Seoul.

Lee, Ki-dong

- 1990 *Suhpyung, Gogohak Aeuei Jubgeun: Munmyung Eui Sungjang Gwa Muylmang* [Book Review, Approach to Archaeology: The Rise and Fall of Civilaization]. *Hanguk Sango Sahakbo* 4:341-343.

Lee, Mun-ki

- 1990 Silla Sanggogi Eui Tongchi Jojik Gwa Gukga Hyungsungsa Munjae [Problems with Government Organization and State Formation in Old Silla Period]. In *Hanguk Godae Eui Gukga Hyungsung* [State Formation in Ancient Korea], edited by the Committee of the Study of Ancient Korean History, pp. 247-284. Min Eum Sa, Seoul.

Lee, Nam-Kyu and Chang-Hwa Kang

- 1994 Jejudo Chulto Handae Hwapae Yumul Eui Han Ye [Newly Discovered Currencies from Che-ju Island]. *Hanguk Sango Sahakbo* 17:581-589.

Lee, Nam-suk

- 1985 Chungdonggi Sidae Hanbando Sahoe Baljeon Dangye Munge [Problems with Sociopolitical Development Stage in the Bronze Age in the Korean Peninsula]. *Baekje Munhwa* [Baekje Culture] 16:71-113.

Lee, Sung-ju

- 1993 Il-Sam Segi Gaya Jungchiche Eui Sungjang [Development of Gaya Politics Between the First and Third Centuries]. In *Hanguk Godaesa Nonchong*, No. 5, edited by Garakguk Sajuk Gaebal Yeonguwon, pp. 69-209. O-jung Press, Seoul.

Lee, Sung-ju and Hyung-gon Kim

- 1990 *Masan Hyundong Yujuk* [Excavation at Hyundong, Masan]. Archaeological Research Report of the Changwon National University Museum, vol. 3. Changwon National University Museum, Changwon, Korea.

Lee, Won-Keun

- 1980 *Samguk Sidae Sunggwak Yeongy* [A Study of Castle Wall of the Three Kingdoms Period]. Unpublished Ph.D. dissertation, Department of History, Danguk University, Seoul.

Lee, Yung-jo

- 1980 *Hanguk Sunsa Munhwa Eui Yeongu* [A Study of Korean Prehistory]. Pyungminsa, Seoul.

Lees, Susan H.

- 1973 *Sociopolitical Aspects of Canal Irrigation in the Valley of Oaxaca*. Memoirs of the Museum of Anthropology University of Michigan Number 6. Ann Arbor, Michigan.

Leonard, Robert D. and George T. Jones

- 1987 Elements of an Inclusive Evolutionary Model for Archaeology. *Journal of Anthropological Archaeology* 6:199-221.

Leone, Mark

- 1984 Interpreting Ideology in Historical Archaeology: Using the Rules of Perspective in the William Paca Garden in Annapolis, Maryland. In *Ideology, Power, and Prehistory*, edited by Danial Miller and Christopher Tilley, PP. 25-35. Cambridge University Press, New York.

Lewellen, Ted C.

- 1983 *Political Anthropology: An Introduction*. Bergin and Garvey, New York.

Lim, Hyo-taek

- 1993 *Nakdonggang Haryuyeok Gaya Eui Togwang Mokgwanmyo Yeongu* [The Study of the Pit-Burial with Wooden Coffin of the Lower Nakdong River, Gaya]. Unpublished Ph.D. dissertation, Department of History, Hanyang University, Seoul.

Mackey, Carol J.

- 1987 Chimu Administration in the Provinces. In *The Origins and Development of the Andean State*, edited by Jonathan Haas, Shelia Pozorski, and Thomas Pozorski, pp. 121-129. Cambridge University Press, New York.

Milisauskas, Sarunas

- 1978 *European Prehistory*. Academic Press, New York.

Miller, Danial and Christopher Tilley

- 1984 Ideology, Power, and Prehistory: An Introduction. In *Ideology, Power, and Prehistory*, edited by Danial Miller and Christopher Tilley, pp. 1-15. Cambridge University Press, New York.

Muller, Viana

- 1987 Kin Reproduction and Elite Accumulation in the Archaic States of Northwest Europe. In *Power Relations and State Formation*, edited by Thomas C. Patterson, and Christine W. Gailey, pp. 81-97. Sheffield Publishing, Salem, Wisconsin.

Mun, Gyung-hyun

- 1973 Jinhan Eui Chulsan Gwa Silla Eui Gangsung [Iron Production of Jinhan and the Development of Silla]. *Daegu Sahak* 7·8:87-119.

Nelson, Sarah M.

- 1982 The Effects of Rice Agriculture on Prehistoric Korea. *Journal of Asian Studies* 41:531-543.
- 1983 The Past Decade in Korean Archaeology: A View from Outside. *Archaeology in Korea: An Annual Review* 10:52-55.
- 1992 The Question of Agricultural Impact on Sociopolitical Development in Prehistoric Korea. In *Pacific Northeast Asia in Prehistory: Hunter-Fisher-Gatherers, Farmers, and Sociopolitical Elites*, edited by C. Melvin Aikens and Song-nai Rhee, pp. 179-183. Washington State University Press, Pullman.
- 1993 *The Archaeology of Korea*. Cambridge University Press, New York.

No, Jung-guk

- 1990 Hanguk Godae Eui Gukga Hyungsung Eui Jaemunjae Wa Gwalleon Hayeo [Concerning Problems with State Formation in Ancient Korea]. In *Hanguk Godae Gukga Eui Hyungsung* [The State Formation in Ancient Korean], edited by the Committee of the Study of Ancient Korean History, pp. 11-38. Min Eum Sa, Seoul.

Oberg, Kalervo

- 1955 Types of Social Structure among the Lowland Tribes of South and Central America. *American Anthropologist* 57:472-487.

Om, Young-sik and Yong-hoon Hwang

- 1974 *Gyungju Inwangdong Sibgu·EsibHo Gobun Balgul Josa Bogo* [Excavation Report of Tomb Nos. 19·20 at Inwangdong Gyungju]. Kyung Hee University Museum Publication No. 1. Kyung Hee University Museum, Seoul.

O'Shea, John M.

- 1984 *Mortuary Variability: An Archaeological Investigation*. Academic Press, New York.

Otterbein, Keith F.

- 1973 The Anthropology of War. In *Handbook of Social and Cultural Anthropology*, edited by J. Honigman, pp. 923-958. Rand McNally, Chicago.

Pak, Bang-Lyong

- 1992 Dosung·Sung Ji [Fortifications·Ruins of Castle]. In *Silla Gogohak* [Archaeology of the Silla Kingdom], edited by Minjok Munhwa Press, pp. 59-112. Minjok Munhwasa, Seoul.

Pak, Chan Kirl and Kyung Rin Yang

- 1974 KAERI Radiocarbon Measurements III. *Radiocarbon* 16:192-197.

Pak, Sun-bal

- 1994 Hangang Yuyeok Eui Chungdonggi Chogi Chulgi Mit Wonsamguk Sidae Ae Daehan Pyunyeonjuk Gochal [Examination of the Chronology of Bronze and Iron Ages, and Proto-Three Kingdoms Period in Han River Region]. *Hanguk Sanggosa Hakbo* 11:37-63.

Park, Dong-baek, and Youn-sik Choo

- 1987 *Changwon Dogedong Gobungun I* [A Group of Tombs at Dogedong of Changwon, Kyung Nam]. Archaeological Research Report of the Changwon National University Museum No. 1. The University Museum Changwon National University, Changwon, Korea.

Patterson, Thomas C.

- 1987 Tribes, Chiefdoms, and Kingdoms in the Inca Empire. In *Power Relations and State Formation*, edited by Thomas C. Patterson and Christine W. Gailey, pp. 117-127. Sheffield Publishing, Salem Wisconsin.

Paulsen, A. C.

- 1981 The Archaeology of the Absurd: Comments on "Cultural Materialism, Split Inheritance, and the Expansion of Ancient Peruvian Empires." *American Antiquity* 46:31-37.

Pearson, Richard

- 1974 Prehistoric Subsistence and Economy in Korea: An Initial Sketch. *Asian Perspectives* 17(2):93-101.

- 1976-1978 Lolang and the Rise of Korean States and Chiefdoms. *Journal of the Hong Kong Archaeological Society* 7:77-90.

- 1985 Some Recent Studies in the Chronology and Social Development of Old Silla. In *Essays in Honour of Professor Dr. Tsugio Mikami on his 77th Birthday--Archaeology*, pp. 181-201. Heibonsha, Tokyo.

- Pearson, Richard, Jong-Wook Lee, Wonyoung Koh, and Anne Underhill
1989 Social Ranking in the Kingdom of Old Silla, Korea: Analysis of Burials. *Journal of Anthropological Archaeology* 8:1-50.
- Peebles, Christopher S.
1971 Moundville and Surrounding Sites: Some Structural Considerations of Mortuary Practices II. In *Approaches to the Social Dimensions of Mortuary Practices*, edited by James A. Brown, pp. 68-91. *Memoirs of the Society for American Archaeology*, No. 25. Society for American Archaeology.

1974 *Moundville: The Organization of a Prehistoric Community and Culture*. Ph.D. dissertation, Department of Anthropology, University of California, Santa Barbara. University Microfilms, Ann Arbor.
- Peebles, Christopher and Susan Kus
1977 Some Archaeological Correlates of Ranked Societies. *American Antiquity* 42:421-48.
- Plog, Fred T.
1975 Systems Theory in Archaeological Research. *Annual Review of Anthropology* 4:207-224.
- Plog, Fred and Steadman Upham
1983 The Analysis of Prehistoric Political Organization. In *The Development of Political Organization in Native North America*, edited by Elisabeth Tooker, pp. 199-213. The American Ethnological Society, Washington D.C.
- Pozorski, Thomas
1987 Changing Priorities within the Chimú State: The Role of Irrigation Agriculture. In *The Origins and Development of the Andean State*, edited by Jonathan Haas, Shelia Pozorski, and Thomas Pozorski, pp. 111-120. Cambridge University Press, New York.
- Preucel, Robert W.
1991 The Philosophy of Archaeology. In *Processual and Postprocessual Archaeologies: Multiple Ways of Knowing the Past*, edited by Robert W. Preucel, pp. 17-41. Center for Archaeological Investigations, Occasional Paper No. 10. Southern Illinois University, Carbondale.

Price, Barbara J.

- 1971 Prehistoric Irrigation Agriculture in Nuclear America. *Latin American Research Review* 6:3-60.
- 1977 Shifts in Production and Organization: A Cluster Interaction Model. *Current Anthropology* 18:209-233.

Randsborg, Klavs and Robert Chapman

- 1981 Approaches to the Archaeology of Death. In *The Archaeology of Death*, edited by Robert Chapman, Ian Kinnes, and Klavs Randsborg, pp. 1-24. Cambridge University Press, New York.

Rathje, William L.

- 1971 The Origin and Development of Lowland Classic Maya Civilization. *American Antiquity* 36:275-285.
- 1972 Praise the Gods and Pass the Metates: A Hypothesis of the Development of Lowland Rainforest Civilization in the Middle America. In *Contemporary Archaeology: A Guide to Theory and Contribution*, edited by Mark P. Leone, pp. 365-392. Southern Illinois University Press, Carbondale.

Redman, Charles L.

- 1973 Research and Theory in Current Archaeology: An Introduction. In *Research and Theory in Current Archaeology*, edited by Charles L. Redman, pp. 5-20. John Wiley & Sons, New York.
- 1978 *The Rise of Civilization: From Early Farmers to Urban Society in the Ancient Near East*. W. H. Freeman, San Francisco.
- 1991 Distinguished Lecture in Archaeology: In Defense of the Seventies—The Adolescence of New Archaeology. *American Anthropologist* 93:295-307.

Redmond, Elsa M.

- 1994 External Warfare and the Internal Politics of Northern South American Tribes and Chiefdoms. In *Factional Competition and Political Development in the New World*, edited by Elizabeth M. Brumfiel and John W. Fox, pp. 44-54. Cambridge University Press, New York.

Renfrew, Colin

- 1986 Introduction: Peer Polity Interaction and Sociopolitical Change. In *Peer Polity Interaction and Sociopolitical Change*, edited by Colin Renfrew, and John F. Cherry, pp. 1-18. Cambridge University Press, New York.

Research Institute for Antiquities

- 1989 *Gimhae Yangdongri Gobun: Balgul Josa Bogosuh* [Tomb at Yangdongri, Gimhae: Excavation Investigation Report]. Research Institute for Antiquities, Seoul.

Research Institute of Korean Archaeology and Art History

- 1984 *Hanguk Gogohak Gaejung Yonguh Jib* [A Dictionary for Revised Korean Archaeological Terms]. Hanguk Gogo Misul Yeonguso, Seoul.

Rhee, Song-nai

- 1984 *Emerging Complex Society in Prehistoric Southwest Korea*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Oregon, Eugene, Oregon.

- 1988 Definition of State and Archaeological Criteria. Paper presented at the First Annual Meeting of the Ancient Historical Society of Korea, Seoul.

Rhee, Song-nai and Mong-lyong Choi

- 1992 Emergence of complex Society in Prehistoric Korea. *Journal of World Prehistory* 6:51-95.

Sabloff, Jeremy A. and Gordon R. Willey

- 1967 The Collapse of Maya Civilization in the Southern Lowlands: A Consideration of History and Process. *Southwestern Journal of Anthropology* 23:311-336.

Sahlins, Marshall D.

- 1961 The Segmentary Lineage: An Organization of Predatory Expansion. *American Anthropologist* 63:322-345.

Sanders, William

- 1968 Hydraulic Agriculture, Economic Symbiosis, and the Evolution of States in Central Mexico. In *Anthropological Archaeology in the Americas*, edited by Betty J. Meggers, pp. 88-107. Anthropological Society of Washington, Washington D.C.

1988 The Mesoamerican Urban Tradition. *American Anthropologist* 90:521-546.

Sanders, William and Barbara Price

1968 Mesoamerica: The Evolution of a Civilization. Random House, New York.

Sanders, William T., and David Webster

1978 Unilinealism, Multilinealism, and the Evolution of Complex Societies. In *Social Archaeology: Beyond Subsistence and Dating*, edited by Charles Redman, Mary Jane Berman, Edward Curtin, William Langhorne, Jr., Nina Versaggi, and Jeffrey Wanser, pp. 249-302. Academic Press, New York.

Sangju County Record Compilation Committee

1987 Sangju Gunji [Record of Sangju County]. Sangju Press, Sangju, Korea.

Saxe, Arthur A.

1970 *Social Mimensions of Mortuary Practices*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Michigan. University Microfilms, Ann Arbor.

Schacht, Robert M.

1988 Circumscription Theory: A Critical View. *American Behavioral Scientist* 31:438-448.

Schiffer, Michael B.

1972 Archaeological Context and Systemic Context. *American Antiquity* 37:156-165.

1976 *Behavioral Archaeology*. Academic Press, New York.

1983 Toward the Identification of Formation Processes. *American Antiquity* 48:675-706.

Schreiber, Katharina J.

1987 From State to Empire: The Expansion of Wari Outside the Ayacucho Basin. In *The Origins and Development of the Andean State*, edited by Jonathan Haas, Shelia Pozorski, and Thomas Pozorski, pp. 91-96. Cambridge University Press, New York.

Service, Elman R.

- 1962 *Primitive Social Organization: An Evolutionary Perspective*. Random House, New York.
- 1971a *Cultural Evolutionism: Theory in Practice*. Holt, Rinehart and Winston, New York.
- 1971b *Primitive Social Organization: An Evolutionary Perspective*. 2nd ed. Random House.
- 1975 *Origins of the State and Civilization: The Process of Cultural Evolution*. W. W. Norton, New York.

Shanks, Michael and Christopher Tilley

- 1982 Ideology, Symbolic Power, and Ritual Communication: A Reinterpretation of Neolithic Mortuary Practices. In *Symbolic and Structural Archaeology*, edited by Ian Hodder, pp. 129-154. Cambridge University Press, New York.
- 1987 *Social Theory and Archaeology*. University of New Mexico Press, Albuquerque.
- 1992 *Re-constructing Archaeology: Theory and Practice*. 2nd ed. Routledge, London.

Shin, Hyung-sik

- 1981 *Samguk sagi Yeongu* [A Study of the *Samguk sagi*]. Ilchokak, Seoul.
- 1984 *Hanguk Godae Eui Sin Yeongu* [A New Study of Ancient Korean History]. Ilchokak, Seoul.
- 1985 *Silla Sa* [History of Silla]. E-hwa Women's University Press, Seoul.
- 1990 Goryeo Jeongi Eui Yeoksa Insik [Understanding of History in the Early Korea Dynasty]. In *Hanguk Sahaksa Eui Yeongu* [A Study of History of Korean History], edited by the Committee of the Study of Ancient Korean History, pp. 35-65. Eul Yu Munhwa Sa, Seoul.

Shin, Gyung-chul

- 1985 Gisik Dengja Go [A Study of Old Style Stirrup]. *Budae Sahak* 9:57-99.

- 1992 Gimhae Yeanri 160 Ho Bunae Daehayeoh: Gobuneui Balsanggwa Gwanleohayeoh [A Study of No. 160 Tomb, at Yeanri Gimhae: In Relation with the Emergence of Mounded Tomb]. *Gaya Gogohak Nonchong* 1:107-167.

Sim, Bong-keun

- 1990 *Hanguk Chungdonggi Sidae Munhwa Eui E-hae* [Understanding of Korean Bronze Age Culture]. Sukdang Mungo 4. Dong-A University Press, Busan, Korea.
- 1991 Hanguk Sunsa Sidae Dojak Nonggyung [Pre-historic Rice Cultivation in Korea]. *Hanguk Gogo Hakbo* [Journal of the Korean Archaeological Society] 27:5-57.

Shon, Jung-tae (editor)

- 1990 *Susan: Sarang Haneun Na Eui Gohyang* [Susan: My Lovely Hometown]. Sunil Press, Milyang, Korea.

Spencer, Charles S.

- 1982 *The Cuicatlán Canada and Monte Albán: A Study of Primary State Formation*. Academic Press, New York.
- 1987 Rethinking the Chiefdom. In *Chiefdoms in the Americas*, edited by Robert D. Drennan and Carlos A. Uribe, pp. 369-389. University Press of America, Lanham.
- 1990 On the Tempo and Mode of State Formation: Neoevolutionism Reconsidered. *Journal of Anthropological Archaeology* 9:1-30.

Spencer, Herbert

- 1969 [1876] *Principles of Sociology*, edited by Stanislav Andreski. Archon Books, Hamden, Connecticut.

Speth, John D. and Gregory A. Johnson

- 1976 Problems in the Use of Correlation for the Investigation of Tool Kits and Activity Areas. In *Cultural Change and Continuity: Essays in Honor of James Bennett Griffin*, edited by Charles E. Cleland, pp. 35-58. Academic Press, New York.

Ssu, Ma-chien

- 1987 [ca. 100 B.C.] *Shih Chih* [Historical Memoirs]. In *Jungguk Jungsa Josunjeon Yeokju Il* [Korean Section in Chinese Standard History: Translation and Footnote I], edited by Korean National History Compilation Committee. Chun Pung Press, Seoul.

Steponaitis, Vincas P.

- 1978 Location Theory and Complex Chiefdoms: A Mississippian Example. In *Mississippian Settlement Patterns*, edited by Bruce D. Smith, pp. 417-453. Academic Press, New York.

Suh, Chan-gi, Gi-yeub Choe, Soo-young Jung, Hong Kim, and Hoon-sung Choe

- 1989 *Godeng Hakgyo Jiri Budo* [High School Atlas]. Pyunghwadang Press, Seoul.

Tainter, Joseph A.

- 1975 Social Inference and Mortuary Practices: An Experiment in Numerical Classification. *World Archaeology* 7:1-15.
- 1977 Modeling Change in Prehistoric Social Systems. In *For Theory Building in Archaeology: Essays on Faunal Remains, Aquatic Resources, Spatial Analysis, and Systemic Modeling*, edited by Lewis R. Binford, pp. 327-351. Academic Press, New York.
- 1978 Mortuary Practices and the Study of Prehistoric Social Systems. In *Advances in Archaeological Method and Theory*, edited by Michael B. Schiffer, vol. 1, pp. 105-141. Academic Press, New York.
- 1988 *The Collapse of Complex Societies*. Cambridge University Press, New York.

Taylor, Walter W.

- 1948 [1983] *A Study of Archaeology*. CAI ed. The Southern Illinois University Press, Carbondale.

Thomas, Franklin

- 1925 *The Environmental Basis of Society: A Study in the History of Sociological Theory*. The Century, New York.

Tilley, Christopher

- 1981 Conceptual Frameworks for the Explanation of Sociocultural Change. In *Patterns of the Past*, edited by Ian Hodder, Glynn Issac, and Norman Hammond, pp. 363-386. Cambridge University Press, New York.

Tourtellot, G., and J. A. Sabloff

- 1972 Exchange Systems Among the Ancient Maya. *American Antiquity* 37:126-135.

Trigger, Bruce G.

- 1989 *A History of Archaeological Thought*. Cambridge University Press, New York.

Upham, Steadman

- 1982 *Politics and Power: A Political and Economic History of the Western Pueblo*. Academic Press, New York.

- 1987 A Theoretical Consideration of Middle Range Societies. In *Chieftdoms in the Americas*, edited by Robert D. Drennan and Carlos A. Uribe, pp. 345-367. University Press of America, New York.

- 1990 Decoupling the Processes of Political Evolution. In *The Evolution of Political Systems: Sociopolitics in Small-Scale Sedentary Societies*, edited by Steadman Upham, pp. 1-17. Cambridge University Press, New York.

Vayda, Andrew P.

- 1971 Phases of War and Peace among the Marings of New Guinea. *Oceania* 42:1-24.

- 1974 Warfare in Ecological Perspective. *Annual Review of Ecology and Systematics* 5:183-193.

Watson, Patty Jo

- 1986 Archaeological Interpretation, 1985. In *American Archaeology Past and Future: A Celebration of the Society for American Archaeology 1935-1985*, edited by David J. Meltzer, Don D. Fowler, and Jeremy A. Sabloff, pp. 439-457. Smithsonian Institution Press, Washington.

Watson, Patty Jo, Steven A. LeBlanc, and Charles L. Redman

- 1971 *Explanation in Archaeology: An Explicitly Scientific Approach*. Columbia University Press, New York.

- 1984 *Archaeological Explanation: The Scientific Method in Archaeology*. Columbia University Press, New York.

Webb, Malcom

- 1975 The Flag Follows Trade: An Essay on the Necessary Interaction of Military and Commercial Factors in State Formation. In *Ancient Civilization and Trade*, edited by C. C. Lamberg-Karlovsky, and Jeremy A. Saloff, pp. 155-210. University of New Mexico Press, Albuquerque.
- 1988 The First States: How—or in What Sense—Did "Circumscription" Circumscribe? *American Behavioral Science* 31:449-458.

Webster, David

- 1975 Warfare and the Evolution of the State: A Reconsideration. *American Antiquity* 40:464-470.
- 1976 *Defensive Earthworks at Becan, Campeche, Mexico: Implications for Maya Warfare*. Middle American Research Institute, Tulane University.
- 1977 Warfare and the Evolution of Maya Civilization. In *The Origins of Maya Civilization*, edited by Richard E. W. Adams, pp. 335-372. University of New Mexico Press, Albuquerque.

Wittfogel, Karl A.

- 1955 Development of Aspects of Hydraulic Societies. In *Irrigation Civilizations: A Comparative Study*, edited by Social Science Section, Department of Cultural Affairs, pp. 43-52. Social Science Monographs I. Pan American Union, Washington D.C.
- 1957 *Oriental Despotism: A Comparative Study of Total Power*. Yale University Press, New Haven.

Woodbury, Richard B.

- 1961 A Reappraisal of Hohokam Irrigation. *American Anthropologist* 63:550-560.

Wright, Henry T.

1972 A Consideration of Interregional Exchange in Greater Mesopotamia: 4000-3000 B.C. In *Social Exchange and Interaction*, edited by Edwin N. Wilmsen. The University of Michigan Museum of Anthropology, Anthropological Papers, No. 46, Ann Arbor.

1977 Recent Research on the Origin of the State. *Annual Review of Anthropology* 6:379-397.

1978 Toward an Explanation of the Origin of the State. In *Origins of the State: The Anthropology of Political Evolution*, edited by Ronald Cohen and Elman R. Service, pp. 49-68. Institute for the Study of Human Issues, Philadelphia.

Wright, Henry T. and Gregory A. Johnson

1975 Population, Exchange, and Early State Formation in Southwestern Iran. *American Anthropologist* 77:267-289.

Wright, Quincy

1965 *A Study of War*. The University of Chicago Press, Chicago.

Yi, Byung-do

1959 *Hanguksa: Godae Pyun* [A History of Korea: Ancient Section]. Eulyu Press, Seoul.

Yi, Gunmu and Hong-ju Kim

1985 Gyungju Whangsungdong Yujuk Balguljosa Bogo [A Pit Tomb at Hwangsungdong, Gyungju]. In *Report of the Research of Antiquities of the National Museum of Korea*, vol. XVII, edited by National Museum of Korea, pp. 63-102. National Museum of Korea, Seoul.

Yi, Kun-moo, Yong-hoon Yi, Kwang-jin Yoon, and Dae-gon Shin

1989 Euichang Dahori Yujuk Balgul Jinjeon Bogo (I) [Research Report of Excavation of the Proto-Three Kingdoms Burial Site at Dahori in Euichang-gun]. *Kogohakchi* [Journal of the Institute of Korean Archaeology and Art] 1:5-174.

Yi, Kun-moo, Kwang-jin Yoon, Dae-gon Shin, and Do-chul Kim

1991 Euichang Dahori Yujuk Balgul Jinjeon Bogo (II) [Proceeding Report of the Proto-Three Kingdoms Burial Site at Dahori, Changwon]. *Kogohakchi* [Journal of the Institute of Korean Archaeology and Art] 3:5-111.

Yoffee, Norman

- 1979 The Decline and Rise of Mesopotamian Civilization: an Ethnoarchaeological Perspective on the Evolution of Social Complexity. *American Antiquity* 44:5-35.

Yoo, Yu-shin

- 1987 *Korea the Beautiful: Treasures of the Hermit Kingdom*. The Golden Pond Press, Los Angeles.

Youn, Moo-byong

- 1976 Gimje Byukgolje Balgul Bogo [Excavation Report on Gimje Byukgol Reservoir]. *Baekje Yeongu* [Baekje Research] 7:67-91.
- 1987 *Hanguk Chungdonggi Munwha Yeongu* [A Study on the Prehistoric Bronze Culture of Korea]. Yegyung Press, Seoul.

Young, John

- 1957 *The Location of Yamatai: A Case Study in Japanese Historiography 720-1945*. The Johns Hopkins University Studies in Historical and Political Science, Series LXXV, No. 2. The Johns Hopkins Press, Baltimore.

Youngnam University Museum

- 1994 *Daegu Siji Taekji Gaebal Jigunae Munhwa Yujuk Balgul Josa: Junggan Gyulgwa Bogosuh 3* [Preliminary Archaeological Site Excavation Report at Siji Residential Development Unit in Daegu No. 3]. Youngnam University Museum, Gyungsan, Korea.

Yun, Byung-yong

- 1986 Busan Nopodong Gobun E-Cha Balgul Josa Gaeyo [Excavation Report of Tombs at Nopodong in Busan]. *Hanguk Gogo Hakbo* [Journal of Korean Archaeological Studies] 19:129-135.

Yun, Se-young

- 1974 Go-Silla-Gaya Gobun Eui Pyunyeon Ae Gwanhayeo [A Study on Chronicle of Old Silla and Kaya Tomb]. *Paeksan Hakpo* 17:41-112.

- 1975 Michoo Wangleung Jigu Je Gu Guyeok (A Ho Pague Gobun) Balgul Josa Bogo [Excavation Report of the Destroyed Tomb No. A in King Michoo Tumulus Area No. 9]. In *Gyungju Jigu Gobun Balgul Josa Bogosuh Je Iljib* [Excavation Report of Tombs in the Gyungju Area Vol. 1], edited by Institute of Cultural Properties, pp. 67-151. Munhwajae Galliguk Gyungju Sajuk Gwalli Samuso, Gyungju, Korea.

Yun, Yong-Jin

- 1975 Michoo Wangleung Jigu Je gu Guyeok (A Ho Pague Gobun) Balgul Josa Bogo [Excavation Report of the Destroyed Tomb No. A in King Michoo Tumulus Area No. 9]. In *Gyungju Jigu Gobun Balgul Josa Bogosuh Je Il Jib* [Excavation Report of Tombs in the Gyungju Area Vol. 1], edited by Institute of Cultural Properties, pp. 7-66. Munhwajae Galliguk Gyungju Sajuk Gwalli Samuso, Gyungju, Korea.
- 1981 *Euisung Jangrimdong Pae Gobungun* [Excavation Report of Looted Tomb Cluster at Jangrimdong, Euisung]. Gyungbuk University Museum, Daegu, Korea.
- 1993 *Daegu Paldaldong Yujuk* [Archaeological Site at Paldaldong, Daegu]. Gyungbuk University Museum Publication No. 18. Daegu City and Gyungbuk University Museum. Daegu, Korea.