New Interpretation of the Stone Replicas in the Russian Maritime Province: Re-Evaluation from the Perspective of Korean Archaeology

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Weapon-shaped stone tools from the Russian Maritime Province have been used by Russian scholars to date the regional Bronze Age and Early Iron Age since they are thought to be mainly replicas of bronze items from the southern Siberian Seima-Turbino, Karasuk, and Tagar cultures. Although Russian archaeologists have paid some attention to the neighboring area comprised of the Korean Peninsula, northeast China and the Japanese archipelago, linguistic barriers have prevented them from a detailed investigation. Recent research in Korean archaeology has shown that there are very similar daggers to the Maritime Province's Tagar-type replicas in Korea's Late Bronze Age. They follow the tradition of stone daggers from the Early Bronze Age, which seems to be influenced by the first millennium BCE Upper Xiajiadian culture from northeast China. This example suggests that a direct influence from southern Siberia appears an unconvincing hypothesis. To reconstruct more precise relationships among various bronze and stone replicas, it is necessary to collect all related objects from the regions in question and to catalogue them for a comparative typological study.

Keywords: Korean archaeology, Russian Maritime Province, stone replica, weapon-shaped stone tool, bronze, imitative production

Introduction

Recently, Korean archaeology began to pay more attention to the Russian

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Maritime Province, after reflecting a sectional interest in the northeast part of present-day China as the source of cultural influence in prehistoric times. Although an essay from the nineteenth century introduced the weapon-shaped stone tools from the Maritime Province in relation to Korea (Macgowan 1892), most studies in Korean archaeology have since attached importance to the area of present-day China, especially the northeast area including Liaoning, Jilin, Heilongjiang, and Shandong provinces. However, a new hypothesis about the beginning of the Bronze Age (Kim 2004) and the origin of Jungdo culture (Subbotina 2008) again stressed the strong cultural influence from the northeast on the Korean Peninsula, namely the Russian Maritime Province. This new perspective will have some impact not only on Korean archaeology, but also on Korean studies itself. Many issues, however, remain disregarded. In this paper the authors focus on one exemplary topic that has led to controversy among researchers from various countries.

In the Russian Maritime Province, weapon-shaped stone tools such as daggers and spearheads have been the focus of many studies since the 1950s. The stone tools were thought to belong to the Bronze and Early Iron ages, dating from the second to the first millennium BCE. According to the traditional view of Russian scholars, the finds were considered to be replicas of Seima-Turbino, Karasuk, and Tagar bronzes from southern Siberia. This conviction also influenced the dating of the Bronze and Early Iron ages of this region.

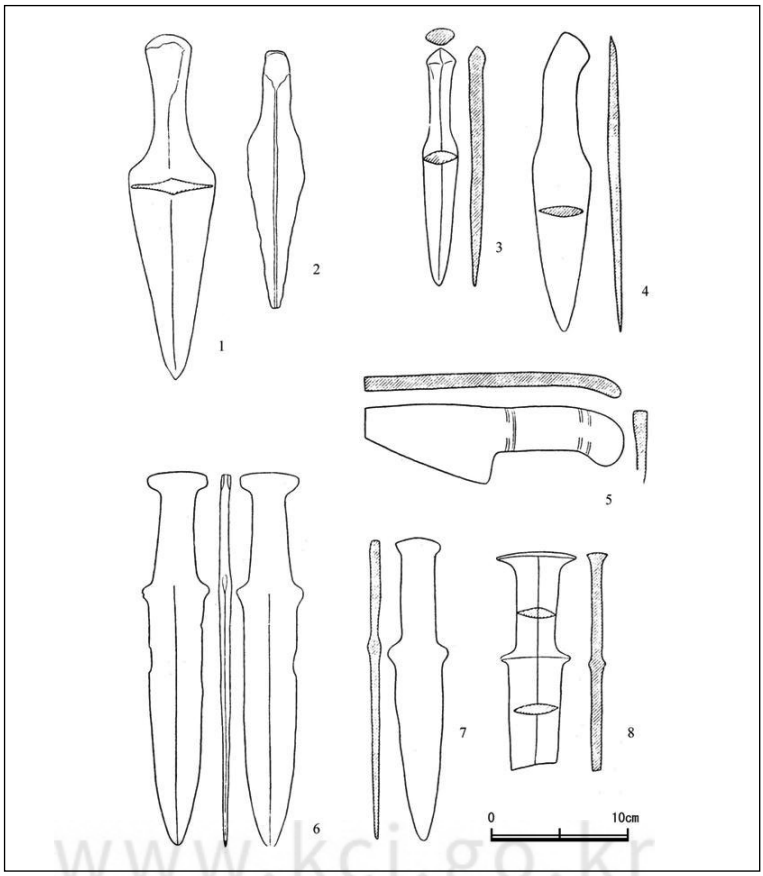
Later studies suggested a close relationship with materials from the Korean Peninsula and northeast China. Reconsidering these views, the authors attempt to set up a new perspective for the weapon-shaped stone tools—or the so-called "replica"—in the Maritime Province by using archaeological remains from Korea and China, rather than from Russia. The Korean Peninsula and northeast China are geographically closer to the Maritime Province than Russia's southern Siberia, but a shortage of information and linguistic barriers have made it difficult for archaeologists to compare the bronze and stone materials of all these areas in detail, namely across several national borders.

Our paper starts with a review of earlier studies on weapon-shaped stone tools in Russia, Korea, and Japan. Then we investigate the stone and bronze materials of the Korean Peninsula and northeast China. In the end, based on a comparative study of these materials and focusing on their typological features and dating, we suggest an alternative interpretation for the origin of weapon-shaped stone tools in the Maritime Province as well as some directions for future research.

Review of Studies on the Stone Replicas in the Maritime Province

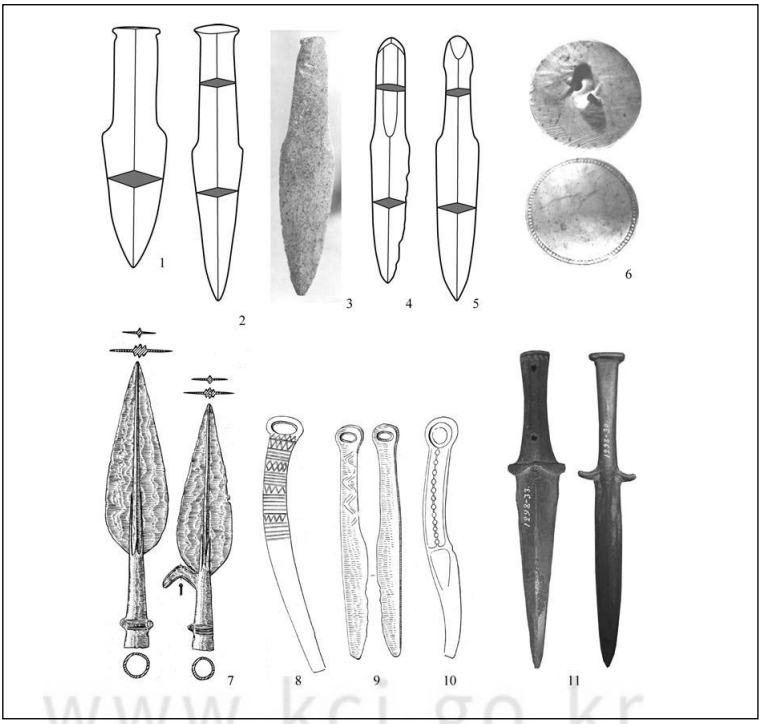
It is well-known that the tradition of stone and clay replicas of bronze was widespread in the Early Metal Period of the Russian Far East (RFE). The replicas received early attention by A. P. Okladnikov (1956). Analyzing Yankovski culture materials, Okladnikov noticed that some of the polished stone tools were similar in shape to metal daggers and spearheads. He divided the stone tools into three groups. The first group is represented by daggers with a hilt and a triangular or leaf-shaped blade (Fig. 1: 1, 2). Okladnikov saw a

Figure 1 Replicas of Yankovski Culture, Maritime Province (Okladnikov 1956). 1-2 replicas with midrib; 3-5 replicas of Karasuk patterns; 6-8 replicas of Tagar patterns.



similarity in the midribs of this stone type and those of metal daggers and spearheads, but he could not find metal prototypes because of the simplicity of their shape (Okladnikov 1956:78). The second group contained stone tools similar to Karasuk bronzes (Fig. 2: 8-10), such as knifes with a triangular blade and a hilt with a pair of notches (Fig. 1: 5), daggers with a triangular blade and curved hilt (Fig. 1: 4), and small daggers with a rhombic cross-section (Fig. 1: 3) (Okladnikov 1956:78-80). The third group included products similar to the iron daggers and swords of the Tagar culture (Fig. 1: 6-8, Fig. 2: 11). These

Figure 2 1-5: Replicas of Yankovski Culture, Maritime Province (Andreeva, Zchuchihovskaya, and Kononenko 1986). 1-3 replicas of Karasuk patterns; 4-5 replicas of Tagar patterns; 6 Stone button from the Kharin valley site, Maritime Province (Okladnikov and Derevyanko 1973).
7-10: Bronze spearheads and knives, Siberia (Rybakov 1987). 7 Seima-Turbino spearheads, Rostovka; 8-10 Karasuk knives, south of Siberia; 11 Tagar bronze daggers, Siberia (Peter the Great Museum of the Russia Academy of Science, Collection No. 1298).

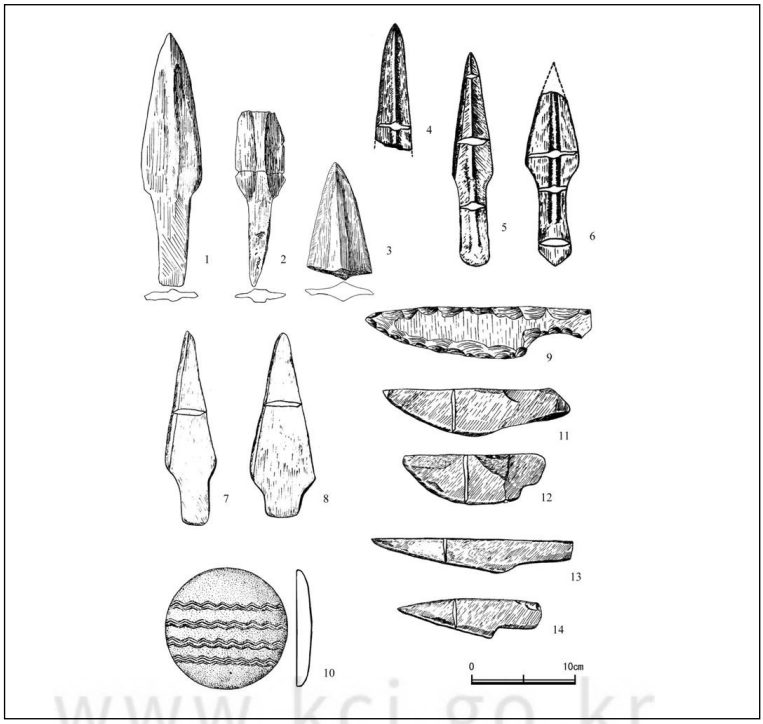


specimens have hilts with T-shaped edges and narrow blades with a rhombic cross-section (Okladnikov 1956:80-1).

Okladnikov discussed that the appearance of weapon-shaped stone tools shows an important change in local societies under the influence from the more developed cultures of China, central Asia, and Siberia. He assumed that Korea and Japan were also under this influence because they produced similar stone tools (Okladnikov 1956:93-4). Based on his classification, Okladnikov suggested two subsequent stages of replica production in the Maritime Province: the first (end of the second millennium BCE) corresponded to the Karasuk bronze curved knives and daggers, including those with midribs, and the second (first millennium BCE) corresponded to Tagar bronze daggers and swords.

Okladnikov's paper was published in 1956 when archaeological studies in the RFE had just begun and no sites had been excavated. His research was, thus,

Figure 3 Replicas of the Bronze Age, Maritime Province (Dyakov 1989). 1-3 stone spearheads with Seima-Turbino patterns (A); 4 stone spearheads with later than Seima patterns (B); 5-6 stone daggers with Karasuk patterns.



based only on accidental finds then stored in museums. Nonetheless, all following research (Andreeva and Studzitskaya 1987; Dyakov 1989; Konkova 1989; Brodyansky 1996) accepted his concepts: 1) link between stone replicas and Siberian bronze prototypes, 2) two subsequent stages in replica production, and 3) a relationship between Russian, Korean, and Japanese weapon-shaped stone tools.

Andreeva, Zchuchihovshaya, and Kononenko (1986) further developed analysis for Okladnikov's third typological group which included the Tagar replica daggers. They also divided the stone daggers of the Yankovski culture into three types, but included newly excavated materials. The first dagger type has a T-shaped hilt end and thorn-shaped hilt-blade joints (Fig. 2: 1-2). The second dagger type has a slightly expanded hilt end and slightly outlined thorn-shaped hilt-blade joints (Fig. 2: 3). The third dagger type has neither hilt-blade joints nor an anyhow shaped hilt end (Fig. 2: 4-5). Andreeva, Zchuchihovshaya, and Kononenko believed that Yankovski stone daggers were copies of Late Karasuk–Early Tagar bronze daggers (eighth to seventh century BCE). The second and third types were regarded as corresponding to bronze daggers with mushroom-shaped hilt ends and slightly marked thorn-shape hilt-blade joints. The first type thus correlated with Tagar bronzes with a T-shaped hilt end and strongly marked thorn-shape hilt-blade joints (seventh to sixth century BCE). All Yankovski daggers as a result were dated within the eighth to fifth century BCE, and it was moreover noted that similar processes must have occurred simultaneously in Korea and Japan.

A great contribution to replica studies came from V. Dyakov and L. Konkova with regard to the constantly growing accumulation of sources. Based on many newly discovered sites, three cultures of the Bronze Age were identified: Margaritov, Sinii gay, and Lidovka. The assemblages of these cultures included stone and clay replicas of bronzes, such as a stone plaque from Kharin valley (Okladnikov and Dyakov 1979), a clay mirror from Lidovka-1 (Dyakov 1989), and weapon-shaped stone tools from Kharin valley, Lidovka-1, Monastyrka-2, and Siniy Scaly. The sets of replicas found in these sites are different from Yankovski replicas: the blades are wider and show midribs in most cases.

A typology of Bronze Age replicas was introduced by Dyakov (1989), although the term 'typology' may be going too far. Dyakov divided all weapon-shaped stone tools into three types. The first type, as a matter of fact, included three different patterns, sharing only the midrib. Pattern A has a flame or leaf-shaped blade with midrib and a simple straight hilt with semi-rounded and/or a

semi-plane cross-section (Fig. 3: 1-3). Dyakov thought that they imitated the Seima-Turbino type spearheads, which were widespread in Siberia during the second millennium BCE and might have appeared in the Far East at the end of that millennium. The pattern B spearhead is similar to Pattern A, but has a narrower blade (Fig. 3: 4) and is considered to have appeared later than Pattern A. Pattern C has a hilt with a pyramid bulge and the shoulder between the blade and hilt is less pronounced (Fig. 3: 5-6). Dyakov considered them replicas of Karasuk bronze daggers.

The second type in Dyakov's classification is represented by a single pattern, which he called "plane spearhead or double-edged knife" (Dyakov 1989:155). Specimens of this type have triangular blades with a plane cross-section and a simple, straight hilt with the same cross-section (Fig. 3: 7-8). Dyakov noted that it is impossible to distinguish spearheads from knives and to find metal prototypes in Siberia.

Dyakov's third type is represented by a knife with a hilt and a straight back and bevel blade with a plane cross section, which is again divided into two patterns: a knife with slight bulges at the end of the hilt (Fig. 3: 9), and a knife with a straight hilt (Fig. 3: 11-14). Following Okladnikov, Dyakov stated that such knives undoubtedly imitated Karasuk knives and he suggested two prototypes for them. Knives with a curved blade (Fig. 3: 14) corresponded to Anyang (安阳) knives from around the thirteenth century BCE, while knives with a concave back (Fig. 3: 11-12) corresponded to the "tailed knife" from around the twelfth to thirteenth centuries BCE. These assignments, however, are not acceptable with regard to the figures he showed.

L. V. Konkova assumed that producing stone substitutes of bronze tools for a funereal ceremony was a common cultural phenomenon in the Sea of Japan area. The shortage of bronze raw materials or the preciousness of bronze itself would have been the reason for this phenomenon and it is also observed around the world in many other Early Metal Age cultures (Konkova 1989 and 1996). Konkova, moreover, argued that although the shape of stone replicas in the Sea of Japan area had changed during the second and first millennium BCE, they always imitated Siberian and central Asian bronze weapons, such as Seima-Turbino spearheads and Karasuk knives and daggers, as well as Tagar daggers.

Like Dyakov, Konkova believed that the stone tools imitated both daggers (the midrib copying the dagger midrib) and spearheads (the midrib copying the tang). All specimens with a midrib have leaf-shaped blades but dagger copies always have a pyramid bulge. Konkova noticed that the bronze prototypes of

spearheads spread widely during the second millennium BCE to all of Eurasia, and daggers spread around the change of the second to the first millennium BCE to the Ordos region and north China. Konkova also emphasized the distribution of replicas with a midrib. In contrast to the replicas of the Yankovski culture, they were all found on the east coast of the central part of the Maritime Province. Konkova dated the beginning of the replica production in the RFE around the change of the second to the first millennium BCE and assumed that it continued to the eighth to seventh century BCE. She also regarded the button from the Kharin valley as an imitation of Karasuk bronze plaques (Konkova 1989:37-41).

Comparing Okladnikov's view with Dyakov's and Konkova's, there is a difference in the emphasis of the respective schemes. In Okladnikov's typology, the midrib was a specific feature of the first group and it was impossible to find metal prototypes. Dyakov and Konkova, on the other hand, considered all blades with a midrib as replicas of Seima-Turbino (Fig. 2: 7) or Karasuk bronzes. They divided all finds into a spearhead and a dagger group, and then regarded the former as replicas of Seima-Turbino bronzes and the latter as replicas of Karasuk bronzes (compare Fig. 3: 1-2 and Fig. 3: 5-6). This led to two chronological stages of replicas in the RFE. The early stage corresponded to pre-Tagar time, and replicas might have had either Seima-Turbino or Karasuk prototypes. The later stage corresponded to the Early Iron Age and Tagar time, thus the replicas might have had either Karasuk or Tagar prototypes. In other words, Okladnikov assumed that Karasuk and Tagar were subsequent stages with regard to replica production, but later scholars included an even earlier Seima-Turbino stage. This is widely accepted today and has been further strengthened by several summarizing papers and monographs.

Problems with the Previous Studies in Russia

New findings conflict with the scheme described above, and so it is still open to discussion. According to recent field reports and publications, ten new finds have been collected, including nine fragments of stone blades and one clay button. These finds come from three sites—Anuchino-1, Anuchino-14 and Suvorovo-8, which are all settlement sites located beyond the Yankovski cultural area. Anuchino-14 and Suvorovo-8 are dated within the ninth to fourth century CalBC by C^{14}. Because the finds are fragments of top edges, and all show a

rhombic cross-section or a very slight midrib, it is unknown whether the blades belong to daggers or spearheads. Although this evidence does not deny the Karasuk replica hypothesis, at least we can confirm that they hardly seem to have a Seima-Turbino influence because of their dates (Yanshina and Kluev 2005:207-8). In other words, dividing the stone replicas into two stages is unconvincing (Yanshina 2004 and 2008).

Why did this contradiction occur? Previous Russian studies seem to have put too much emphasis on the search for bronze prototypes. Basic archaeological questions such as classification, typology, cultural context, and function were disregarded. As for the typology, attention has been paid only to features that helped search for prototypes, thus following Okladnikov's view uncritically. No other option besides Siberian bronzes had been considered as the origin for the stone blades, although other interpretations would have been possible (Yanshina 2005).

For instance, flame-shaped blades and midribs had been considered Seima-Turbino features. But these features are not limited to Seima-Turbino spearheads. Such attributes might indicate other groups of bronze spearheads as well, such as Western Zhou (西周), the Upper Xiajiadian culture (夏家店上层文化), the Shiertaiyingzi culture (十二台营子文化), or the Xituanshan (西团山) culture in China. This problem of shape definition also applies to Karasuk daggers. Although a midrib and wide blades are considered attributes of Karasuk daggers, it is also possible to interpret these daggers as Seima-Turbino spearheads. The other attribute regarded as a typical Karasuk feature, the pyramid bulge on hilts, is not convincing either. Additionally, the idea that people would have copied only the hilt end without copying another obvious feature of the Karasuk dagger, namely the thorns, is hard to follow. In summary, there are many possible alternatives to the interpretations focusing on Siberian bronzes.

D. A. Sapfirov (1992) was the first who noticed this problem. He pointed out the weakness of the hypothesis of a correlation between replicas and their supposed bronze prototypes. Sapfirov saw the major reason for this weakness in the great diversity of shapes and emphasized three points of criticism: First, the specimens in question could be the result of copying not from the bronze original but from their own copy or even from oral communications. Second, there might have been more than one cultural tradition of replica production in the RFE. Third, problems might have occurred during the copying process—such as the inability of identifying certain features—resulting in a defect or

incomplete copies. Although Sapfirov did not decide which alternative was most plausible, his contribution does point out important problems.

Studies Outside of Russia

Research on stone blades is also going on in Japan and Korea. Hirai (1961) compared the polished stone daggers from the Maritime Province and the Korean Peninsula, based on the earlier study of Arimitsu (1959). Hirai pointed out the similarity between the Russian and the Korean materials, and regarded the Russian finds as replicas of Korean bronzes, sharing the same historical context. Komoto (1973) followed this opinion, and, moreover, called attention to other weapon-shaped stone tools in northeast China. Komoto tried to date the replica stone daggers in the Maritime Province based on Arimitsu's study. He assumed polished stone daggers with a hilt appeared on the Korean Peninsula in the sixth century BCE, and dated the specimens from the Maritime Province from the middle to later part of the first millennium BCE. This dating is later than that of the Russian scholars described above.

Usuki (1989), like Komoto, assumed an influence of bronze cultures in northeast China and the Korean Peninsula on the stone daggers of the Maritime Province. Usuki dated the daggers from the middle to the later part of the first millennium BCE—as Komoto did, and, moreover, dated the Bronze Age of the Maritime Province to the middle part of the first millennium BCE. Usuki's dating is also younger than the dating done by the Russian scholars, but this younger dating seems to be wrong.

Onuki (1998:165-6) stressed the tendency in the distribution of polished stone tools in northeast Asia. Spearheads actually were dominant in the northeast area, while only daggers were developed in the southwestern area, especially on the Korean Peninsula. In Japanese research, the close relationship between Russian materials and Korean and Chinese materials is generally emphasized, rather than comparing the finds to bronzes in southern Siberia.

Another opinion was brought up in Korea. Kang (2003) refers to the weapon-shaped stone tools stored in the Khabarovsk Museum as replicas of Karasuk and Scythic-Siberian bronzes, thus agreeing with previous studies in Russia. Kang argues that the former part of the Bronze culture in the Maritime Province had a close relationship with the Eurasian steppes, rather than with northeast China or the Korean Peninsula. In a recent paper, he discussed the

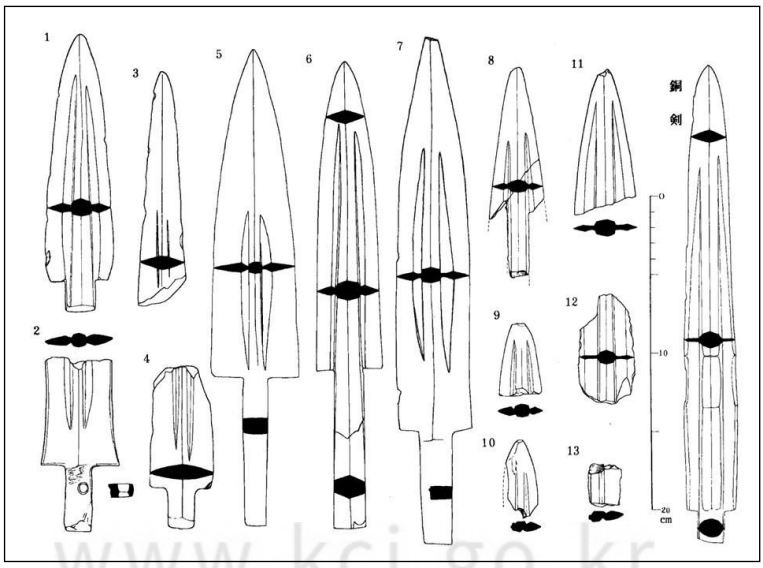
stone replicas again and dated them between the fifteenth and tenth centuries BCE, thus following Dyakov's chronological scheme (Kang 2007:111).

To further examine the assertions summarized above, especially with regard to the various possible geographic interrelations, we have to investigate the Korean materials that seem to have become the center of the controversy. We deal with them in the next section, beginning with a brief review of previous studies on Korean materials.

Weapon-shaped Stone Tools on the Korean Peninsula

Study of the weapon-shaped polished stone tools on the Korean Peninsula, especially daggers, was started by the Japanese scholar Arimitsu. He established a chronology of stone daggers on the Korean Peninsula and regarded the slender bronze dagger (*sehyeong donggeom*) as the prototype, based on the existence of blood grooves (Fig. 4). His study appears typologically logical, but his assumption of prototypes only reflects the general view of his time. Almost a decade later, the excavation of the Baju Oksok-ri dolmen site revealed that the slender bronze dagger appeared later than the stone daggers. This new perception

Figure 4 Stone daggers (1-13) and a slender bronze dagger (Arimitsu 1959)



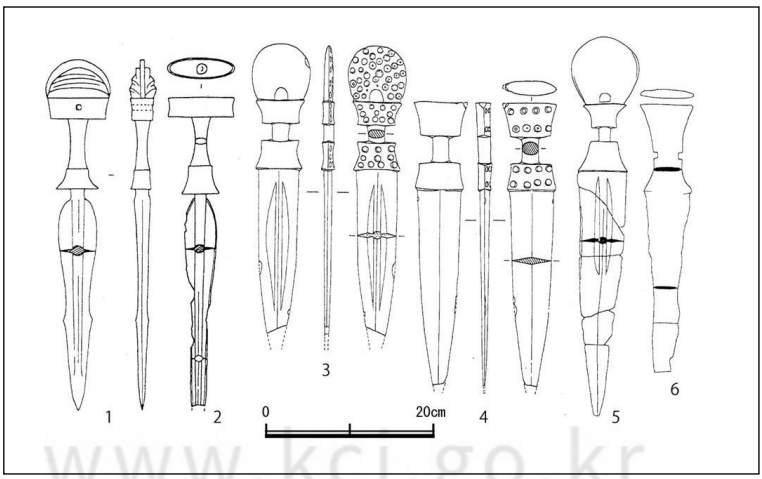
was supported by the stratigraphy of the site and C^{14} dating (Kim and Yun 1967). Thus the slender bronze dagger cannot be the prototype of stone daggers.

Up to now, the prototype question about Korean stone daggers has been much discussed, but no conclusion has yet been reached. The majority believes that the stone daggers are influenced by the bronzes of northeast China (Son 2006). Therefore, the studies by Komoto (1973) and Usuki (1989), which followed Arimitsu's (1959) view relating to the prototype, seem to be incorrect. The date of the appearance of stone daggers must be older than previously thought.

On the other hand, Kondo (2000) suggests a relationship between Liaoning Bronze daggers in the Upper Xiajiadian culture and stone daggers in South Korea (Fig. 5). This opinion is widely accepted in spite of the geographical distance because the specimens belong in the same period. According to Kondo, Korean stone daggers might have appeared as early as the end of the ninth century BCE. Recent chronological studies in Japan and Korea support a shift from 'short chronology' to 'long chronology' (Shoda 2007), the latter dating the appearance of stone daggers in Korea as early as the end of the second millennium BCE.

Shoda (2004) has contributed a chronological study of materials from the southwestern Yeongnam area since relevant finds are most abundant in this area. The combination of four types of pottery and four types of stone arrowheads as

Figure 5 Bronze daggers from the Upper Xiajiadian culture (1, 2) and Korean stone daggers (3-5) (Kondo 2000:747)



well as three types of stone daggers excavated from tombs have been examined (Fig. 6). Pot 'a' is accompanied with stone arrowhead 'v,' 'A,' and 'Ba,' as well as stone dagger 'a.' Pot 'b' is accompanied with the stone arrowhead 'Ba' and stone dagger 'a.' Pot 'c' is accompanied with stone arrowhead 'Ba' and 'Bb,' as well as stone dagger 'b' and 'c.' Pot 'd' is accompanied with stone arrowhead 'Bb' and stone dagger 'c' in each tomb. Thus, the time difference and continuity of the finds have been confirmed (Table 1).

Recently, Son (2006) has examined weapon-shaped stone tools from the entire Korean Peninsula, including arrowheads and daggers (Fig. 7). According to his study, concave-based arrowheads and double-stepped root arrowheads and daggers with a two-stepped hilt (Fig. 7, upper) belong to the Early Bronze Age (EBA), while most of the straight root arrowheads and non-stepped hilt daggers (Fig. 7, lower) belong to the Late Bronze Age (LBA). The above-mentioned

Figure 6 Pottery and stone tools from burials in southwest Yeongnam (Shoda 2004, modified)

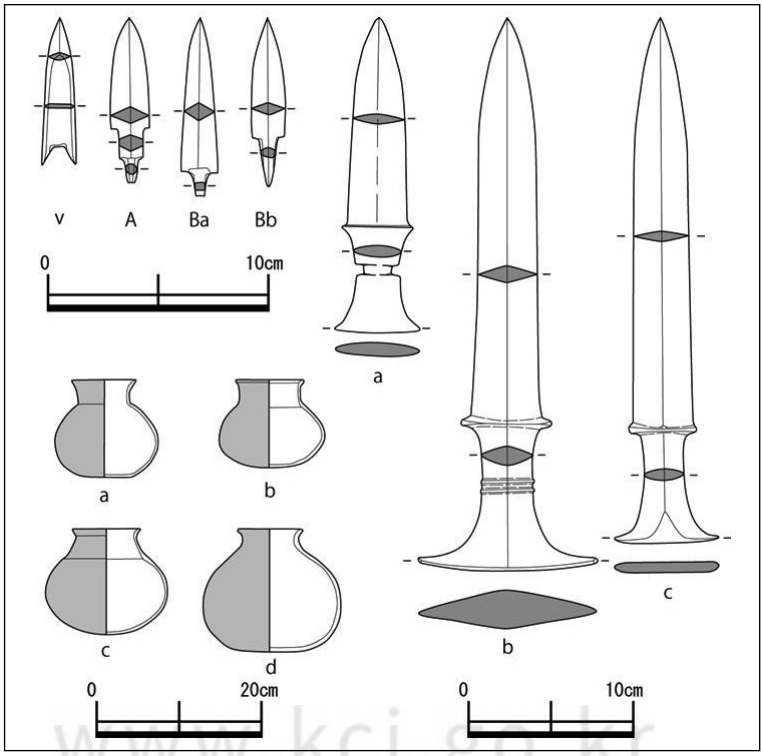
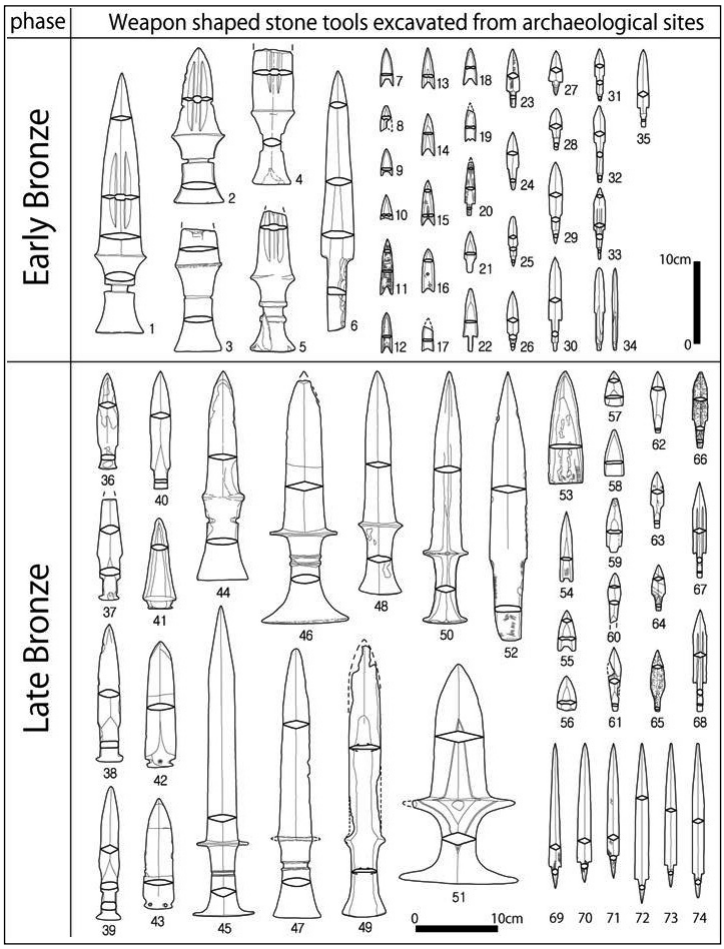


Table 1 Combinations of pottery and stone tools in the Southwestern Yeongnam Area, Korea (Shoda 2004)

Site Name	Arc. Feature	Pottery				Stone Arrowhead				Stone Dagger		
		a	b	c	d	v	A	Ba	Bb	a	b	c
Sindangri	Stone coffin	○				○						
Jopori E	Dolmen 8	○				○				○		
Okbang 8	Stone coffin 15	○				○	○					
Okbang 8	Stone coffin 5	○				○	○	○				
Okbang 8	Stone coffin 3	○				○		○		○		
Sangdong	Stone burial 6						○					
Shinchonri	Stone coffin II-5		○									
Jopori E	Dolmen 5		○									
Daepongdong	Loc.1 Dolmen 2		○					○		○		
Dongcheondong	Pit 20							○		○		
Gainri	Stone burial 11										○	
Shijidong	Stone burial I-15		○								○	
Shijidong	Dolmen I-3			○				○			○	
Shijidong	Stone burial II-2			○				○				
Shinchonri	Stone coffin I-3								○		○	
Daepongdong	Loc.2 Dolmen 11							○				○
Gainri	Stone burial 10			○							○	○
Maehodong	Stone coffin III-5											○
Moogaeri	Burial			○					○			○
Dodong	Dolmen Ba			○					○			
Waedongri	Dolmen			○					○			○
Okbang 2	Stone coffin 10				○							○
Sawolri	Dolmen 4				○				○			○
Gigokdong	Stone coffin 4								○			○
Sawolri	Dolmen 1								○			○
Jopori E	Dolmen 7								○			○
Daepyeongri	Loc. O Dolmen 2								○			○
Sampo	Dolmen 8								○			○
Sampo	Dolmen 9								○			○
Daeya	Dolmen 1								○			○
Daeya	Dolmen 2								○			○

Figure 7 Weapon-shaped stone tools in Korean Early Bronze Age and Late Bronze Age (Son 2006, modified)



stone dagger type 'a' would belong to Son's earlier stage; 'b' and 'c' to the later. The stone arrowheads 'v,' 'A,' and 'Ba' belong in the EBA and 'Ba' and 'Bb' in the LBA. Thus the chronological system of Shoda's study seems to fit well into Son's analysis.

There are many finds in the Korean LBA that are similar to stone daggers of the Maritime Province, often addressed as Tagar replicas (compare fig. 7: 48-50 with fig. 1: 6-8, fig. 2: 2). These finds are, moreover, dated in the same period, about the

eighth to the fifth century BCE. On the Korean Peninsula, this 'Tagar replica' kind of dagger chronologically follows the earlier type of stone daggers in this area. In other words, the stone daggers in the LBA smoothly followed the stone tool producing tradition of the EBA. Since the stone daggers in the Korean EBA seem to be influenced by the bronzes from northeast China, as Kondo and Son indicated, we now need to examine those bronzes, which will be done in the next section.

One more point before that relates to the stone knives that are regarded by Dyakov as replicas of bronzes from the later part of the second millennium BCE. Bae (2007:8) focused on this kind of knife and showed that their distribution reached from Jilin Province in China to the southern end of the Korean Peninsula. Although the knives belong to various periods of time and different traditions, Bae dated them roughly to the whole Korean Bronze Age, namely from the end of the second millennium BCE to the middle of the first millennium BCE. Considering this, it seems more reasonable to approach stone knives from the Maritime Province as being the same kind of knife as had been collected in the neighboring areas of the Korean Peninsula and northeast China.

Bronze Cultures of Northeast China in the First Millennium BCE

The Upper Xiajiadian culture (夏家店上层文化) is named after an assemblage from the upper layer of the Xiajiadian site in Chifeng (赤峰), Inner Mongolia, China. Zhu, who worked on sites of this culture and analyzed their features, postulated three cultural stages. Generally, this culture is dated from the beginning of the Xizhou (西周) to the Chunqiu (春秋) period, or from the later part of the eleventh century to the middle of the first millennium BCE, by comparing typical bronze wares with those of the central plain (Zhu 1987). One of the typical findings from the Upper Xiajiadian culture is the 'Liaoning type' dagger (Fig. 5: 1-2, Fig. 8: 1-2). In fact, this type of dagger is distributed very widely, including not only in China but also in Korea and Japan. Characteristic of the Liaodong dagger is its midrib, as well as the lute-like shape of the blade. Bronze spearheads of this culture also have midribs (Fig. 8: 3-4). Other typical finds are bronze knives (Fig. 8: 5-6).

Another culture with bronze weapons is the Xituanshan (西团山) culture in Jilin (吉林) Province. This culture was dated by Dong (1983) to the period from Xizhou to Zhanguo (战国). This culture also has 'Liaoning bronze' daggers with a midrib and bronze knives. One example of a bronze knife from the

Figure 8 Bronzes in the Upper Xiajiadian culture (modified from the Northeast Asian History Foundation 2007)

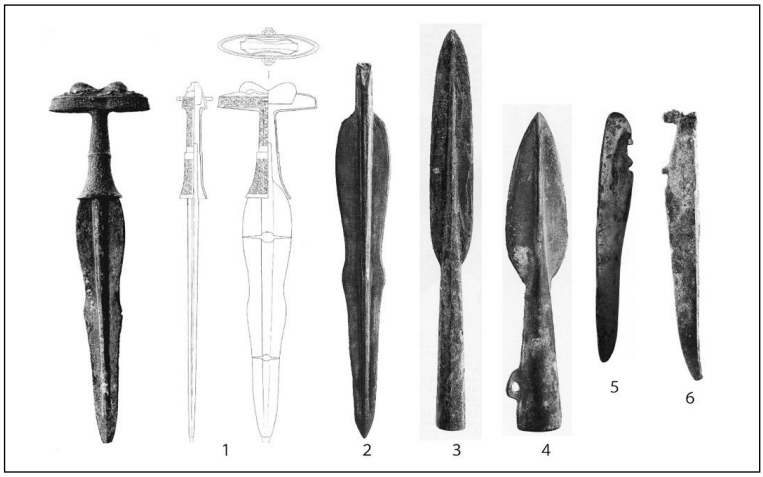
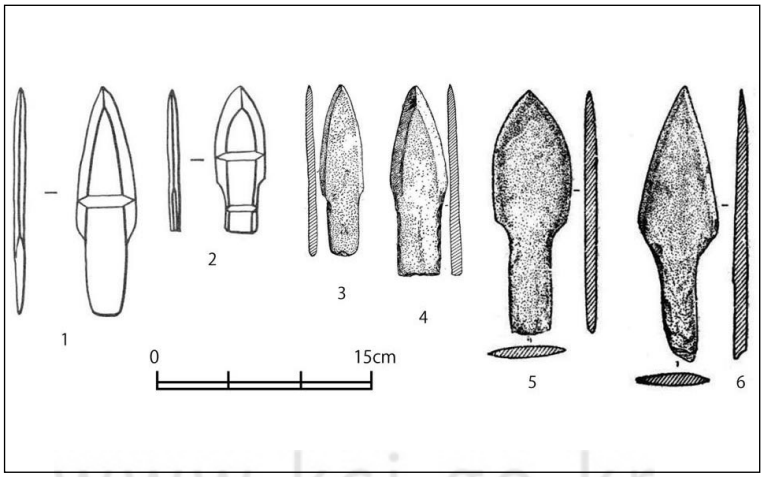


Figure 9 Stone spearheads from the Yankovski culture (1-2) and the Liutingdong subculture (3-6). 1-2 Andreeva, Zchuchihovshaya, and Kononenko 1986; 3-4 Jilin wangyangonglu kaogudui 1992; 5-6 Yanbian chaoxianzu zizhizhou bowuguan 1982



Dahaimeng (大海猛) site is dated as late as the later part of the first millennium BCE. The date of the stone knives could be much younger than those of the Karasuk culture.

For the stone spearheads in the Yankovski culture, we can find similar specimens in Jilin Province. As shown in Fig. 9, this kind of spearhead has been excavated from the Xinguang (新光) and Jingu (金谷) sites in Yanji (延吉), located close to northeast Korea. They belong to the Liutingdong subculture (柳庭洞类型) and show a shape very similar to the Yankovski culture examples.

Of course, there are some artifacts that support the supposed influence of Karasuk bronzes in the Maritime Province. The clay mirror from the Lidovka-1 site (Fig. 3: 10) and the stone button from the Kharin valley site (Fig. 2: 6) have been regarded as replicas of Siberian bronze mirrors from around the fifth century BCE or of Andronovo-style bronze plaques (Dyakov 1989:207). While the former artifact is too unique for supposing any prototype, for the latter we can find some influence from Karasuk bronzes. The clay button from Anuchino-14 also has a Karasuk pattern design; it shows radial notches on the edge (Yanshina and Kluev 2005:207-8). Similar examples have been excavated from Siniy Gay (Yanshina and Kluev 2005:207-8), and the Kharin valley (Fig. 2: 6). These finds indicate the link between Karasuk bronzes, which were spread throughout north Asia, and Early Metal culture of the RFE.

However, the apparent influence from Karasuk bronzes as such does not support the dating by Dyakov (1989) and Kang (2007), who both regard the RFE's weapon-shaped stone tools as belonging in the middle of the second millennium BCE. Very similar stone tools exist in neighboring regions and they obviously belong in the first millennium BCE. In addition, although there must have been some influence from the Siberian bronzes in the first millennium BCE, it is not to be found on the weapon-shaped tools, but on ornaments such as mirrors. There actually is no evidence for this kind of interrelation going as far back as the second millennium BCE.

Conclusion and Future Tasks

The weapon-shaped stone tools from the Maritime Province have been used for the dating of the regional Bronze Age and the Early Iron Age since they are predominantly thought to be replicas of the southern Siberian bronzes. But as has been shown, we need to reexamine this scheme entirely. So-called 'Tagar

replicas' in the Maritime Province show a very close relationship with the stone daggers of the Korean LBA. Concerning the continuity of the stone tool producing tradition on the Korean Peninsula, the hypothesis of a direct influence from Tagar bronzes (Konkova 1989) appears unconvincing. This does not only concern Japanese approaches. Komoto's (1973) chronology today appears highly suggestive and has some drawbacks. The dating for Yankovski daggers should be from the earlier to the middle part of the first millennium BCE, if we apply the same dating as the Korean material he refers to. Recent excavations and studies in Russia support this dating, as we have seen.

Moreover, the stone spearheads as replicas of Seima-Turbino bronzes appear to be problematic because the features picked to support this hypothesis are not limited to these finds. It is therefore even more problematic to date these stone replicas to the second millennium BCE. The second type of spearhead of the Yankovski culture, which shows a flat cross-section, is also present at sites in Jilin Province, dating from as late as the first millennium BCE. For the stone knives, which are regarded as replicas of Karasuk knives, we may consider the possibility that there was a closer relationship with stone and bronze knives from Korea and China which continued until as late as the later part of the first millennium BCE.

Thus it is reasonable to interpret the appearance of weapon-shaped stone tools as a reaction to the beginning of an inflow of bronze and a limited access to them—a common feature of cultures in peripheral areas. This is what the pioneers suggested (Okladnikov 1956; Arimitsu 1959; Konkova 1989). Studies in northwest Europe have also reported a similar cultural phenomenon, which occurred near the close of the third millennium BCE (Stafford 1998). Future studies, therefore, should focus on revealing this process in detail and solving the basic problems and tasks outlined here. First, a detailed classification and typology are necessary. Until now, only a small part of the finds has been published; most of them are still unknown. They are stored in different museums in Russia and difficult to access. Only after putting together all replica finds composing a respective catalog can we start with classification and typology. Second, it is important to incorporate accidental findings with the material that comes from clear archaeological contexts. Thus the replicas' chronology and their cultural provenance and distribution will be revealed. And third, by doing this we may eventually find the bronze prototypes, and identify the interrelation with other replicas in neighboring areas.

Moreover, some replicas are supposed to exist which were made under

indirect influence, as has been suggested by Sapfirov (1992). In fact, in Japan, there are different kinds of stone replicas which are thought to be both direct and indirect imitations. An example of the former is the polished stone dagger, which imitates the slender bronze dagger. Such finds are distributed in the middle part of the Japanese main island and they date from the later part of the first millennium BCE. An example for the latter type is the polished stone dagger with a hilt, which seems to imitate Korean stone daggers; these specimens are distributed on Kyushu Island (Teramae 2002). A comparative study on a large scale will also help us to understand the historical contexts of replicas in each area.

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