Human and Raptor Interactions in the Context of a Nomadic Society

Anthropological and Ethno-Ornithological Studies of Altaic Kazakh Falconry and its Cultural Sustainability in Western Mongolia

Takuya Soma

kassel university press

Ökologische Agrarwissenschaften UNIKASSEL

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1st Supervisor:	Prof. Dr. Eva Schlecht, University of Kassel and University of Göttingen
2nd Supervisor:	Prof. Dr. Nikolaus Schareika, University of Göttingen
Examiner:	Prof. Dr. Andreas Bürkert, University of Kassel
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Preface

This research focuses on current falconry practice in the Altaic Kazakh nomadic society in western Mongolia. Falconry culture played a significant role in human history, not only for royalty and the panache of higher strata, but also as a source for literal imaginary. During medieval times, the term "*falconry*" was a common metaphor in literature pointing to love, the sexual chase and the relation between male and female in poetry [Bates 2011: 411]. The famous balcony scene in Shakespeare's "*Romeo and Juliet*" was established from a figurative motif of "falconer-raptor imagery" as if the master tries to tame his hawk or falcon [Brown 1996: 334]. "*Hamlet*" similarly contains no less than 22 images relating to sports and games, of those three from falconry (checking, pitch, French falconers) [Kökeritz 1947: 320]. A figurative rhetoric of falconry is also seen in Dante's poetry (*canzoni*), first reference in "*Tre donne intorno al cor*" and "*Doglia mi reca*", of which ideas were greatly inspired from "*De arte venandi cum avibus (The Art of Falconry)*" by Frederic II of Hohenstaufen [Boccassini 2007: 161]. This brief overview shows that relationships between falconry masters and hunting birds used to deeply anchor in the symbolic dimension of medieval European literal works.

Once, there were rich tradition and disciplines of falconry culture across all parts of East Asia. However, falconry tradition especially across Asian territories has been undergoing decline in the process of modernisation during the last century. It is thus threatened with disappearance of cultural resources or century-lasting inspiring sources for art and humanity. Today, "*in situ*" falconry, still deeply affiliated with the daily livelihood as a living tradition, is only seen in Altaic Kazakhs in Western Mongolia. Hence, an initial purpose of this study project was to seek both theoretical and empirical criteria for cultural preservation of Asian falconry. This cultural and even environmental discourse was enriched by concentrated field research in the areas of ecological anthropology and ethno-ornithology, taking the viewpoints of "Human-Animal Interaction (HAI)" and "Human-Animal Behavior (HAB)".

In view of the current indeterminate situation surrounding Altaic Kazakh falconry, such as absence of basic socio-cultural information, precursory research, or a theoretical framework, this research departed from the following initial questions: (i) When and where did proto-culture of raptor taming customs start? (ii) How and why can Altaic Kazakhs tame the Golden Eagle? (iii) How can we conserve indigenous eagle falconry for the future? These three questions are further elaborated in the three main chapters of this thesis, namely: Chapter I. *Ancient History of Asian Falconry*; Chapter II. *Ethnographic Narrative of Altaic Kazakh Falconry*; Chapter III. *Cultural Sustainability of Eagle Falconry*. The future cultural sustainability of Altaic Kazakh falconry culture will be analyzed through these three different perspectives, by activating and utilising cultural and anthropological discourses along with the actual ideas and actions of falconers for cultural preservation of this cultural heritage.

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Summary

Human and Raptor Interactions in a Nomadic Society

Anthropological and Ethno-Ornithological Studies of Altaic Kazakh Falconry and its Cultural Sustainability in Western Mongolia

This research project focuses on current eagle-taming falconry practice of the Altaic Kazakhs animal herding society in Bayan Ulgii Province in Western Mongolia. Falconry culture used to hold a significant status in human history, not only as avocational hunting, royal sport and panache of higher strata, but also even as a source of literal imaginary. However, falconry cultures, especially across Asian territories, have been undergoing a decline through the process of modernization during the last century. This threatens with disappearance from human history those cultural resources and the century-lasting legacy of "art and humanity sense".

Hence, an initial purpose of this thesis is to seek both theoretical and empirical criteria for cultural preservation of Asian falconry. This cultural and even environmental discourse is illustrated with concentrated field research designed by ecological anthropology and ethno-ornithology from the viewpoint of "Human-Animal Interaction (HAI)" and "Human-Animal Behavior (HAB)". The theoretical framework of this project also includes a protection of "Traditional Art and Knowledge (TAK)" developed by Kazakh eagle masters. The current situation is characterised by the absence of basic socio-cultural information, precursory research and a theoretical framework surrounding Altaic Kazakh falconry. This research therefore departs from three initial questions: (1) *When and where did raptor taming custom start*? (2) *How and why can Altaic Kazakhs tame Golden Eagle*? (3) *How can we conserve indigenous eagle falconry for the future*?

These three questions are further elaborated below. They address three key aspects in each part - Part I: Cultural Depth of Asian Falconry (Historical Investigation), Part II: Ethnographic Narrative of Altaic Kazakh Falconry (Ethnographic Documentation), and Part III: Cultural Sustainability of Eagle Falconry (Cultural Preservation). Ways and criteria for fostering cultural sustainability of Altaic Kazakh falconry will be analysed from these three perspectives.

Part I: Cultural Depth of Asian Falconry for Historical Investigation

Part I (Chapter 2 & 3) introduces ethno-archaeological and ethno-ornithological interpretive research which provides the historical depth of Asian falconry culture. It implies a certain chronological scale of Asian falconry culture and testifies a deep affiliation of its

practice with various societies in time and space, especially nomadic animal herding societies in Central and North Asia, and sedentary cultures in ancient China, and Japan. Some results of Part I encourage a local axiological endeavor to stipulate recognition and attachment of falconry as a cultural domain in those societies.

Chapter 2 introduces falconry and falconer-related archaeological motifs with 15 examples (Case NA-01 – NA-15) from the northern Eurasian steppe belt, and Chapter 3 analyses 9 examples (Case EA-01 – EA-09) from ancient China and Japan. This information is mainly collected from published literate sources. The spatial expansion of these archaeological findings seems to correspond to the living sphere of the nomadic animal herders. Concrete figures of falconry appeared in China since the 1st century and in Japan since the 6th century A.C.. Even though little evidence is so far available, this part concludes that Asian falconry culture started not later than 2,300 years ago (from 3rd century B.C.) in the northern steppe belt. Besides, contemporary Kyrgyz and Altaic Kazakh horse-riding falconry seems to have had a close cultural link to classical Asian falconry which has 1,300 years of tradition, dating back not later than the Turkish Period (7th century A.C.).

Part II: Ethnographic Narrative of Altaic Kazakh Falconry

Part II (Chapter 4 & 5) provides an extensive ethnographic narrative of Altaic Kazakh falconry, which is the central part of this research project. The local falconry has to face some critical problems nowadays; it is necessary to prevent the complete disappearance of TAK, a singularity of indigenous eagle-tamed falconry. The other is the necessity of a master plan to advocate the cultural backbone of indigenous falconry. Both need precise ethnographic information about eagle masters' living status and the socio-ecological basis of falconry practice. Concentrated field work was carried out from July 2011 to January 2013 at Sagsai County, Bayan Ulgii Province in Western Mongolia, of which the core theme was defined by ecological anthropology and ethno-ornithology. The research benefitted from 47 local informant eagle masters (n=23 at Sagsai and n=24 from Altai, Tolbo and Ulaanhus counties).

Chapter 4 focuses on indigenous taming art and skills by local eagle masters. Most of the masters (n=40 persons) lived off herding activities in the resident pastureland, and only 7 persons were settled in Sagsai county-center. This fact indicates that local falconry activity and eagle-ownership are still closely linked to the context of active animal herding. Results of actual participant observation and semi-structured interviews provide a concrete picture of each stage of the eagle-taming process, such as the capture of the eaglet from the nest, perching, feeding, and training. Especially, some falconry equipment reflects indigenous manners for taming, such as the arm brace (*baldak*) for perching heavy eagle on horseback, and the bone-made drinking tube (*tutuk*) for water-gavage purpose. TAK and ethno-ornithological recognition of Altaic Kazakhs share several ideas with the classical

British falconry. Eagle masters used to release 4 – 5 year-old eagles to the wild after the winter season, in order to let them breed her next generation. This local discipline “the capture and release custom” shows HAB with the philosophy of nature-guardianship between the master and Golden Eagles, but is infrequently practiced nowadays.

Chapter 5 clarifies a concrete figure of recent falconry practice. In Sagsai territory, the actual hunting operation was implemented only by 2 informant falconers at the Agjal Mountain in Sagsai. One of the reasons for this decline is the decrease of foxes and prey animals in the mountains. More effortless ways of hunting, such as trapping and gun-shooting, are now dominating the local hunting context. In this research, a total of 10 hunting-days (from 24th November 2011 to 21st January 2012) were observed with actual participation in the hunting excursion. Local hunting routes and 11 particular hunting points (HP-A- HP-I and HP-Z01 - HP-Z02) were specified in the hunting mountain by GPS logging. Besides, the general hunting distance and duration of daily excursion was recorded of which a single excursion distance on the regular route from HP-A to HP-G (or HP-H) is ca. 6.4 - 7.8 km and normally about 5 hours are spent on a single way. The total distance of the round excursion between HP-A and HP-I is not less than 20 km. The furthest eastern point (HP-I) is 5.7 km (4.95 km in direct distance) and the furthest northern point (HP-G) is 6.1 km (4.42 km in direct distance) in walking distance from the hunters’ homestead. Thus, horseback mobility is inevitable to achieve this hunting excursion. The hunting practice also inevitably relies on the cooperation with beaters, which are considered the “brain” of the operation. Hence, they have a preferential right to obtain an initial harvest by conventional rule. This chapter illustrates the current decline of hunting practice which is correlated to the above-mentioned decrease of foxes and prey animals, expansion of trap hunting, and gun shooting, and the physical burden of hunting activities.

Part III: Cultural Sustainability of Eagle Falconry for Culture Preservation

Part III (Chapter 6 & 7) focuses on the cultural sustainability of Altaic Kazakh falconry. This part intends to contribute to its academic definition as an intangible cultural heritage, and to provide scientific criteria for a preservation master plan, as well as stipulate local resilience by pointing to successive actions needed for conservation.

Chapter 6 illustrates a recent ethno-cultural upheaval in Altaic Kazakhs and analyses some ambivalent impacts on local falconry and eagle-ownership. Now, local eagle falconry has become a central axis for their ethnic representation, which is highlighted by the establishment of “The Golden Eagle Festival” at Ulgii and Sagsai County. The festivals brought about a brand-new cultural value of eagle-ownership among the young generation; nevertheless the central purpose of eagle holding tends to be demonstration for tourism purposes only. Actual hunting activities and even careful taming treatments based on TAK are no more deeply enrooted in current falconry affairs. Such a massive “de-contextualization” into demonstrative falconry seems to be one of the central threats for

cultural preservation. Besides, the festivals have indeed expanded nation-wide, although they are becoming a business opportunity, only fulfilling stakeholders' intentions without practical and conceptual participation of local residents in the festivals.

Chapter 7 explains the social-ecological dependency of eagle falconry on local animal herding livelihood and natural resources. Close liaisons between eagle falconry and transhumant animal husbandry are characterized by the interactive exchange of feed for consumption by the eagle, provision of a riding horse for hunting mobility, and the benefit of seasonal transhumance for the eagle's health management at cool pastureland. Especially, this research estimates that 6~9 local sheep/ goats ($_{approx.}$ 110 - 130 kg of flesh) is necessary for the annual feeding of one hunting eagle; this shows that the daily feeding tasks are a central financial burden for poor falconers, deciding on continuance or discontinuance of falconry. As a result, fostering sustainable husbandry and regional development is needed to reduce the burden of the huge expenditures for feeding. They have thus to be defined as an inseparable indirect action for cultural preservation.

Eagle falconry culture also indisputably depends on local natural resources such as the population of eagles and their prey animals. However, such resources are not efficiently managed. There is some exploitation, especially visible form the example of recent eaglet and eagle traffics among local falconers and herders. In brief, exchanges of Golden Eagles from August 2011 ~ September 2012 among informant maters (n=44 persons) included new capture of eaglets (n=3), brand-new acquisition of birds (n=2), exchange (n=5), loss by death (n=3), and sales (n=3). There should also be considerable illegal transactions, but it is not possible to see the whole picture. As one reason, disappearance of TAK and less careful treatment of birds by immature eagle owners accelerate frequent sickness and death of eagles at the human sphere. In addition, the "capture and release custom", which used to oblige falconers to release 4 - 5year-old eagles to nature, has nowadays disappeared. This suggests that the indigenous philosophy of nature-guardianship has almost vanished in the current situation. This result points to the need for legal protection of eagle populations and falconry, and its control.

From a practical point of view, this research project concludes that cultural sustainability of Altaic Kazakh falconry needs to be supported from the angles of three theoretical frameworks; (1) Cultural affairs for protection based on the concept of nature-guardianship in its cultural domain, (2) Sustainable development and improvement of animal herding productivity and herder's livelihood, (3) Natural resource management, especially supporting the population of Golden Eagles, their potential prey animals, and their nesting environment. The series of these sustaining procedures stresses on not only a direct preservation action, but also an indirect approach, in order to raise the overall social status of eagle masters.

The research results lead to the new hypotheses that falconers' interventions on Golden Eagles do have some positive contribution in each stage of the taming process; (1) Capture

of the strongest eaglet fosters survival of brother (sister) eaglets, (2) Taming leads to acquisition of non-humanophobic characteristics, (3) Feeding various kinds of meat leads to a wide range of dietary preferences, (4) Training develops the bird's hunting skills and techniques, and (5) Release fosters the propagation of the eagle population with a "manned" status. This hypotheses support the world-wide known ideas of falconers that their knowledge is beneficial to human coexistence with wild raptors.

From a theoretical point of view, this research has the clear objective to advocate the extraordinary TAK of the Altaic Kazakh community and its successive transmission over generations. The study illustrates a way of practical application of culture-historical facts, ethnographic information, and anthropological discourses for cultural preservation. This is one of the inseparable attitudes of all field-based anthropologists. This study also points to the necessity of theory building and hopes to provide a role model of how fieldworkers should manage to build a bridge between the local society and their own presence.

Zusammenfassung

Mensch-Greifvogel-Interaktionen
in einer nomadischen Gesellschaft

Anthropologische und ethno-ornithologische Studien der altaisch-kasachischen Falknerei und ihre kulturelle Nachhaltigkeit im Westen der Mongolei

Die vorliegende Dissertation befasst sich mit der Adler-basierten Falknerei der nomadischen Altai-Kasachen in der Provinz Bayan-Ulgii im Westen der Mongolei. Die Falknerei-Kultur nahm historisch gesehen einen bedeutenden Rang in der Geschichte der Menschheit ein, nicht nur als Jagd, königlicher Sport und Unterhaltung der höheren Schichten, sondern auch als Quelle der Inspiration literarischer Werke. Vor allem im asiatischen Raum ging jedoch die Praxis der Falknerei während des letzten Jahrhunderts im Zuge der Modernisierung stark zurück. Damit sind auch kulturelle Ressourcen und ein jahrhunderte-altes Erbe von "Kunst und Menschlichkeit“ vom Verschwinden bedroht.

Daher war es das erste Ziel dieser Studie, sowohl theoretische als auch empirische Kriterien für die Bewahrung des Kulturerbes der asiatischen Falknerei zu definieren. Dieser kulturelle und ökologische Diskurs wird auf der Grundlage von Daten aus konzentrierter Feldforschung geführt; letztere beruht auf Ansätzen der ökologischen Anthropologie und der Ethno-Ornithologie und beleuchtet das Forschungsthema aus Sicht der “Mensch-Tier Interaktionen“ (englisch: Human-Animal Interaction, HAI) und des „Mensch-Tier Verhaltens“ (englisch: Human-Animal Behavior, HAB). Der theoretische Rahmen des Projekts umfaßt auch den Schutz von „Traditioneller Kunst und Wissen“ (englisch: Traditional Art and Knowledge, TAK), welches von den kasachischen Adler-Meistern entwickelt wurde.

Derzeit sind kaum Informationen zu den sozio-kulturellen Rahmenbedingungen der kasachischen Adler-Falknerei im Altai vorhanden, ein theoretischer Rahmen für entsprechende Forschung fehlt. Daher geht die vorliegende Untersuchung von folgenden zentralen Fragen aus: (1) Wann und wo begann das Zähmen der Greifvögel? (2) Wie und warum zähmen die altaischen Kasachen Steinadler? (3) Wie kann die indigene Tradition der Adler-Falknerei in Zukunft bewahrt werden?

Die drei Fragen bilden die Kernpunkte der drei Hauptkapitel der Dissertation - Teil I: Kulturelle Tiefe der asiatischen Falknerei (historische Untersuchung); Teil II: Ethnographische Geschichte der Falknerei der Altai-Kasachen (ethnographische Dokumentation), und Teil III: Kulturelle Nachhaltigkeit der Adler-Falknerei (Bewahrung des kulturellen Erbes). Die Ausrichtung der Adler-Falknerei der Altai-Kasachen und Kriterien für deren kulturelle Nachhaltigkeit werden aus diesen drei Perspektiven heraus analysiert.

Teil I: Kulturelle Tiefe der asiatischen Falknerei - Historische Untersuchung

Teil I (Kapitel 2 & 3) stellt die ethno-archäologische und ethno-ornithologische Forschung dar und beleuchtet die historische Tiefe der asiatischen Falknerei-Kultur. Er zeigt die chronologische Abfolge der asiatischen Falknerei-Kultur auf und belegt deren enge räumliche und zeitliche Verbindung mit verschiedenen Gesellschaften, vor allem nomadischen Tierhaltern in Mittel- und Nordasien, und sesshaften Kulturen im alten China und in Japan. Einige Ergebnisse dieses Abschnitts deuten auf lokale axiologische Bemühungen hin, welche die Anerkennung und Aufnahme der Falknerei als Teil der Kultur der jeweiligen Gesellschaften anstrebten.

Kapitel 2 führt Falknerei- und Falkner-bezogene archäologische Motive ein und diskutiert 15 Beispiele (NA-01 - NA-15) aus dem nördlichen eurasischen Steppengürtel, und 9 Beisiele (EA-01 - EA-09) aus China und Japan. Diese Informationen stammen hauptsächlich aus der Literatur; die räumliche Ausdehnung dieser archäologischen Befunde scheinen dem Lebensraum der heute lebenden zentralasiatischen nomadischen Hirtenvölker zu entsprechen. Konkrete Anhaltspunkte für die Falknerei in China und Japan gibt es seit dem ersten bzw. sechsten Jahrhundert unserer Zeitrechnung. Obwohl bisher wenig Beweise zur Verfügung stehen, wird in diesem Kapitel die Schlussfolgerung gezogen, dass die asiatische Falknerei-Kultur nicht später als vor 2.300 Jahren begann (im 3. Jahrhundert vor unserer Zeitrechnung) und ihren Ausgangspunkt im nördlichen Steppengürtel Zentralasiens hatte. Außerdem scheint die zeitgenössische berittene Falknerei der Kirgisien und Altai-Kasachen in einer enge kulturelle Verbindung zur klassischen asiatischen Falknerei zu stehen, welche eine 1.300-Jahre alte Tradition hat und nicht später als in der Türkischen Periode (7. Jahrhundert unserer Zeitrechnung) entstand.

Teil II: Ethnographische Geschichte der altaisch-kasachischen Falknerei

Teil II (Kapitel 4 & 5) ist eine umfangreiche ethnographische Dokumentation der zeitgenössischen Falknerei altaischer Kasachen und stellt den Kern der Untersuchungen dar. Die lokale Falknerei ist heute mit einigen kritischen Problemen konfrontiert; es besteht daher die Notwendigkeit, das komplette Verschwinden des TAK und der Besonderheit der Adler-Falknerei zu verhindern. Des Weiteren bedarf es eines Masterplans, um die indigene Falknerei kulturell zu stützen. Für alle diese Anliegen sind genaue ethnographische Informationen zur Lebenssituation der Adler-Meister und zu den sozio-ökologischen Grundlagen der Falknerei-Praxis unabdingbar. Daher wurde von Juli 2011 bis Januar 2013 in der Bayan Ulgii Provinz in der West-Mongolei intensive Feldarbeit durchgeführt, deren theoretischen Hintergrund die ökologische Anthropologie und Ethno-Ornithologie bildeten. Die Forschung basierte auf Interviews und teilnehmender Beobachtung von 47 Adler-Meister in den Bezirken Sagsai (n=23), Altai, Tolbo und Ulaanhus (n=24).

Kapitel 4 befasst sich mit den indigenen Gepflogenheiten des Zähmens und Abrichtens der Adler durch die Meister. Die meisten der Falkner (n=40) praktizierten mobile Tierhaltung, nur 7 Person waren im Sagsai County-Center sesshaft. Diese Tatsache zeigt, dass die lokale Falknerei und der Besitz von Jagdadlern noch eng mit einer nomadischen Lebensweise verbunden sind. Die Ergebnisse der teilnehmenden Beobachtung und der semi-strukturierten Interviews liefern ein detailliertes Bild jeder Stufe des Prozesses des Erwerbs und der Zähmung des Adlers, nämlich die Entnahme der weiblichen Adlerjungen aus dem Horst, Pflege, Fütterung und Ausbildung. Einige Falknerei-Geräte spiegeln die Besonderheit der lokalen Adler-Falknerei wider, zum Beispiel die Armstütze (*baldak*) für das Tragen des schweren Adlers während der Jagd zu Pferde, und das knöcherne Tränkrohr (*tutuk*) für die kontrollierte Wassergabe im Winter. Insgesamt lässt die Analyse des TAK und der ethno-ornithologischen Einsichten in die Praktiken der altaischen Kasachen einige Parallelen zur klassischen britischen Falknerei erkennen. Traditionell entließen die Adler-Meister ihre 4 – 5 Jahre alten Adlerweibchen wieder in die Wildnis, um ihnen nach der letzten Jagd- / Wintersaison die Möglichkeit zu geben, sich fortzupflanzen. Dieser lokale Brauch des "Fangens und Freilassens", der jedoch heute nur noch selten praktiziert wird, deutet auf HAB hin das auf der Philosophie der Naturwächterfunktion des Menschen beruht, welche sich in diesem Fall in der Beziehung zwischen Falkner und Adler zeigt.

Kapitel 5 illustriert am konkreten Beispiel die aktuelle Falknerei-Praxis. Im Bezirk Sagsai wird das eigentliche Jagen mit Adlern heute nur noch von zwei der interviewten Falkner praktiziert. Die Gründe für diesen Rückgang der Jagpraxis liegen im Rückgang an Füchsen und Beutetieren in den Bergen. Daher dominieren heute einfachere Methoden der Jagd, wie Fallenstellen und das Jagen mit Gewehren. Durch Teilnahme an insgesamt 10 Jagdtagen (von 24 November 2011 bis 21 Januar 2012) wurden die lokalen Jagdrouten, Tagesdistanz, Jagddauer und spezielle Jagd-Punkte (n=11; HP-A – HP-I und HP-Z01 – HP-02) mittels GPS erfasst. Ein einzelner Ausflug auf dem regulären Weg von HP-A nach HP-G (oder HP-H) war ca. 6,4 - 7,8 km lang und dauerte ca. 5 Stunden. Die Gesamtstrecke von HP-A nach HP-I beträgt ca. 20 km. Vom Ausgangspunkt der Jagd aus gesehen beträgt die fußläufige Distanz zum östlichsten Punkt (HP-I) 5,7 km (4,95 km Luftlinie), und zum nördlichsten Punkt (HP-G) 6,1 km (4,42 km Luftlinie). Um diese Strecken zurückzulegen ist die Nutzung eines Pferdes unumgänglich. Die Jagdpraxis basiert außerdem genauso unvermeidlich auf der Kooperation zwischen dem Treiber, dem „Kopf“ der Jagd, und dem Falkner. Daher hat der Treiber traditionell einen bevorzugten Anspruch auf die erste Jagdbeute. Das Kapitel diskutiert den aktuellen Rückgang der Praxis der Adlerjagd, welcher korreliert ist mit dem oben beschriebenen Rückgang der Füchse und Beutetiere, der Ausbreitung der modernen Jagdmethoden und den physischen Belastungen der Adlerjagd.

Teil III: Kulturelle Nachhaltigkeit der Adler-Falknerei - Bewahrung des kulturellen Erbes

Teil III (Kapitel 6 & 7) konzentriert sich auf kulturelle Nachhaltigkeit der Falknerei der altaischen Kasachen. Dieser Teil beabsichtigt, zur akademischen Definition dieser Praxis als der eines immaterielles Kulturerbes beizutragen, und wissenschaftliche Kriterien für einen Masterplan sowie konkrete lokale Maßnahmen zu dessen Erhalt vorzuschlagen.

Kapitel 6 zeigt den jüngsten ethnisch-kulturellen Umbruch unter den altaischen Kasachen auf und analysiert einige ambivalente Auswirkungen desselben auf die lokale Falknerei und das Halten von Adlern. Die Adler-Falknerei wurde in jüngster Zeit zur zentralen Achse der ethnischen Repräsentation der altaischen Kasachen, was durch die Begründung der "Steinadler Festivals" in den Bezirken Ulgii und Sagsai unterstrichen wird. Diese Festivals bewirkten einen ganz neuen kulturellen Wert des Adler-Besitzes bei der jungen Generation, tendenziell ist jedoch der zentrale Zweck des Haltens der Adler nun die Demonstration für touristische Zwecke. Eigentliche Jagd-Aktivitäten und das umsichtige Fangen und Zähmen auf Grundlage von TAK sind mit dem heutigen Halten von Adlern nicht mehr stark verbunden. Solch eine massive "Dekontextualisierung" und Umwandlung in eine demonstrative Falknerei stellt eine zentrale Bedrohung für die Bewahrung dieses spezifischen Kulturerbes dar. Außerdem haben sich die Festivals inzwischen landesweit ausgedehnt und verkommen zur Geschäftsidee, die nur der Erfüllung der Zwecke spezifischer Interessenvertreter dienen, ohne die ortsansässige Bevölkerung konzeptionell und praktisch mit einzubinden.

Kapitel 7 erläutert die sozial-ökologische Abhängigkeit der Adler-Falknerei von der lokalen mobilen Tierhaltung und den natürlichen Ressourcen. Die enge Verbindung zwischen der Adler-Falknerei und der transhumanten Tierhaltung besteht insbesondere im Bereich der Ernährung der Adler mit Fleisch und in der Notwendigkeit eines Pferdes zur Ausübung der Jagd, aber auch in der saisonalen Transhumanz der Herden zu hochalpinen kühlen Sommerweiden, die die Gesundheit der Adler befördert. Es kann davon ausgegangen werden, dass für die jährliche Fütterung eines Adlers 6 - 9 Schafe / Ziegen (ca. 110 - 130 kg Fleisch) benötigt werden; dies stellt eine hohe finanzielle Belastung für arme Falkner dar und beeinflusst deren Entscheidung über Fortsetzung oder Einstellung der Falknerei stark. Daher sollte durch Förderung einer nachhaltigen Tierhaltung und Regionalentwicklung zur Verringerung der erheblichen Aufwendungen für die Fütterung der Adler beigetragen werden – dies wäre zugleich eine indirekte aber unerlässliche Maßnahme zur Bewahrung des Kulturerbes.

Der Fortbestand der Adler-Falknerei hängt aber auch ab von lokal verfügbaren natürlichen Ressourcen wie z.B. der Adlerpopulation und der ihrer Beutetiere. Jedoch werden diese Ressourcen heutzutage nicht mehr nachhaltig genutzt. Es gibt deutliche Anzeichen der Übernutzung, insbesondere hinsichtlich des Handels mit Adlern und Adlerjungen durch lokale Falkner und Hirten. Zwischen August 2011 und September 2012

wurden von 44 Adler-Meistern drei Jungvögel und zwei ausgewachsene Vögel gefangen, fünf Adler ausgetauscht, und drei verkauft. Darüber hinaus starben drei Adler. Sehr wahrscheinlich gibt es noch viel mehr illegale Transaktionen von Adlern, doch diese sind schwer zu erfassen. Ein Grund für diese Problematik ist der Verlust von TAK und unsachgemäße Behandlung der Vögel durch unerfahrene Besitzer; dies befördert Krankheit und Tod der gefangenen Adler. Darüber hinaus schwindet der in Teil II beschriebene obligatorische Brauch des "Fangens und Freilassens" immer mehr. Dies lässt annehmen, dass die indigene Philosophie des Naturschutzes und des Menschen als Naturwächter in der gegenwärtigen Situation kaum mehr Beachtung findet. Diese Einsichten führen zu der Einforderung, den Schutz der Adlerpopulationen und der Adler-Falknerei rechtlich zu verankern und zu kontrollieren.

Aus den in dieser Dissertation zusammengefassten Forschungsergebnisse ist zu schließen, dass die kulturelle Nachhaltigkeit der altaisch-kasachischen Falknerei von drei unterschiedlichen theoretischen Standpunkten aus unterstützt werden muss: (1) aus kultureller Sicht muss das Konzept des Naturschutzes in seinem ursprünglichen Kulturbereich wieder verankert werden; (2) aus Sicht der nachhaltige Entwicklung muss eine Verbesserung Reproduktionsleistung der Herden und der Lebenssituation der Hirten angestrebt werden; (3) aus ökologischer Sicht muss eine nachhaltige Bewirtschaftung der natürlichen Ressourcen, vor allem der Steinadlerpopulation, ihrer potenziellen Beutetiere und ihrer Nistplätze, sichergestellt werden. Die Liste dieser unterstützenden Schritte betont nicht nur direkte Schutzmaßnahmen, sondern auch indirekte Anstrengungen, die notwendig sind, um den allgemeinen gesellschaftlichen Status der Adler-Meister zu erhöhen.

Die Erkenntnisse leiten über zu neuen Hypothesen, dass nämlich die Haltung und Handlungen der Falkner in den einzelnen Abschnitten des Fangens und Zähmens eine positive Wirkung auf die Steinadler/-population haben: (1) das Fangen des größten (weiblichen) Jungvogels verbessert die Überlebenschancen der schwächeren Jungvögel; (2) das Zähmen mindert die Scheu des Adlers vor Menschen und ermöglicht ihm so nach Freilassung den Aufenthalt in der Nähe menschlicher Behausungen; (3) die Gewöhnung an eine Vielzahl von Beutetieren/Fleisch erweitert das Nahrungsspektrum und damit die Überlebenschancen des freigelassenen Adlers; (4) die Schulung für die Jagd entwickelt und erweitert die Fähigkeiten und Techniken des Voges; (5) das Freilassen des Adlers nach 5 Jahren befördert das Fortbestehen der Population und Weitergabe der erlernten Fähigkeiten an die Nachkommen. Diese Hypothesen stützen die generelle Ansicht, dass die Falknerei vorteilhaft ist für das Fortbestehen von Greifvogelpopulationen und deren Koexistenz mit der Spezies Mensch.

Aus theoretischer Sicht ist es das erklärte Ziel der vorliegenden Untersuchung, für den Erhalt des außergewöhnlichen TAK der kasachischen Gemeinschaft im Altai und dessen Weitergabe an nachfolgende Generationen einzutreten. Daher befasst sie sich mit Möglichkeit zur praktischen Anwendung der aus den kulturhistorischen Fakten,

ethnographischen Informationen und dem anthropologischen Diskurs gewonnenen Einsichten für die Bewahrung dieses Kulturerbes. Dies ist eine der grundsätzlichen Haltungen aller empirisch arbeitenden Anthropologen. Die Untersuchung weist auch auf die Notwendigkeit der Theoriebildung hin und hofft, ein Beispiel dafür zu geben, wie Feldforscher eine Brücke zwischen lokalen Gesellschaften und ihrer eigenen Vor-Ort-Präsenz schlagen können.

Research Outline

General Introduction and Research Objectives

1. General Introduction and Research Objectives

1.1. Introduction

This research project intends to clarify an ethnographic figure of contemporary eagle falconry practice (known as “eagle hunting” or “horse-riding falconry”) still extensively practiced by Altaic Kazakh eagle masters across the Altai Mountains, Western Mongolia. Falconry/hawking culture is not only an elaborate legacy of Human-Animal Interaction (HAI), but also used to be one of the most influential practices deeply affiliated with political power, social stratum, symbolism of the divine, and royal activity in human history. The origin of this culture is estimated to date back more than 2,500 years according to archaeological findings. Now, falconry, practiced in 11 countries (United Arab Emirates, Belgium, Czech, France, Korea, Mongolia, Morocco, Qatar, Saudi Arabia, Spain, and Syria), has been also inscribed on “*The Representative List of the Intangible Cultural Heritage of Humanity*” as a Living Human Heritage in November 2010, which is including eagle falconry of Altaic Kazakhs in Western Mongolia [UNESCO 2010a, 2010b]. The outstanding universal value (OUV) of falconry tradition is acknowledged as one of the highest status in the world-wide cultural domain.

Currently, in Bayan-Ulgii (Баян-Өлгий/ Bayan-Ölgii) Province of Western Mongolia only the Altaic Kazakhs have kept the eagle-taming tradition and are still anchored in a part of traditional livelihood and actual hunting activity. In their falconry discipline, local falconers (known as “eagle hunter”, or literally “eagle hawker”, but “eagle master” is used below) only train female Golden Eagles (*Aquila chrysaetos daphanea*) and falconry is practiced inevitably on horseback. Their hunting target is almost limited to Red Fox (*Vulpes vulpes*) or Corsac Fox (*Vulpes corsac*) for the reason of fur material acquisition for ethnic cloth making.

The presence of this little known culture was primarily reported to the outside not by researchers, but by some travel writings [Millard 1999, Bodio 2001, 2003]. Some folk studies have been done by the local researcher К. Бикұмар [Бикұмар 1994], although the information was not presented in a referable publication and therefore difficult to access. There are two Japanese documentary films, “*Daisougen ni Inuwashi ga mau (Soaring of Golden Eagle in the Sky): Mongol-Kazakh-zoku Takajyo no Oyako (Chikyuu ni Koukishin)*” [Japan Broadcasting Corporation (NHK) 2003], and “*Boku to Inuwashi no Huyu Monogatari (A Winter Story of Golden Eagle and Me)*” [Japan Broadcasting Corporation (NHK) 2006] which are also available to document a local falconer’s livelihood. While their Traditional Art and Knowledge (TAK) in ethno-ornithological recognition, for taming procedures, and of hunting operation was defined as a part of intangible cultural heritage (ICH), an extensive scientific research has not

been carried out yet so that nobody could have figured out current issues of the ethnographic narrative about Altaic Kazakh falconry and masters' livelihood, nor academic criteria for cultural preservation.

1.2. Research Objectives

This research project comprises ecological anthropology and ethno-ornithology as a core axis, particularly from the viewpoint of "Human-Animal Interaction (HAI)" and "Human-Animal Behavior (HAB)". The principal observations focus on the various relationships between the master and hunting Golden Eagle along a series of "rapport-making" processes, together with the falconer's livelihood in the context of a nomadic society. Besides, cultural sustainability of falconry culture is analyzed through basic research to create a theoretical basis for its preservation.

In view of the current uncertain situation surrounding Altaic Kazakh falconry (such as lack of basic socio-cultural information, precursory research, theoretical framework, etc.), the initial research questions (Q01 - 03) of this project address three key aspects:

Q01: When and where did the original raptor taming custom start?

Q02: How and why do Altaic Kazakh falconers tame Golden Eagles?

Q03: How can we preserve indigenous eagle falconry for the future?

Thereby, these questions naturally guide the setup of primary research tasks (T01 - 03) designated to:

T01: Specification of historical and cultural depth of Asian falconry culture.

T02: Description of a concrete ethnographic narrative of contemporary Altaic Kazakh falconry and falconers.

T03: Contribution to cultural preservation of sustainable use of local falconry culture with anthropological designation and scientific criteria from research results.

In a broad sense, this study aims at setting up a theoretical model for preservation of world-wide practiced falconry culture from research results.

1.3. Subjects and Methods

In order to establish an initial academic and scientific basis for further studies and preservation, a classical style of ethnographic fieldwork research was chosen for the core methodology which is based on intensive long term live-in fieldwork and non-structured communication with local informants for a central discourse of social research. The fieldwork has been carried out from July 2011 to January 2013 under financial support by *The Takanashi Foundation for Arts and Archaeology 2011 and 2012* (founded by the Marujin Holdings Company, Limited). Preliminary results were briefly published in reports and journals [Soma 2012a-f, 2013a-d]. Each above-mentioned part (Part I - III) refers to a specific viewpoint; (1) ethno-archaeology (for Part I), (2) ecological anthropology and ethno-ornithology (for Part II), and (3) heritage sociology and sustainability (for Part III) representing the sequence of the research procedure.

As to historical investigation (Part I), archaeological information related to falconry and falconer figures were collected mainly from literal sources specialized in archaeological investigation in Central Asia, China, and Japan. Subsequently, a set of compiled archaeological images is interpreted from an anthropological/ ethno-ornithological point of view. This ethno-archaeological procedure (compilation and interpretation) creates a preliminary discourse about the proto-ethnography of falconry culture in ancient North and East Asia.

As to ethnographic narrative (Part II) and cultural conservation (Part III), a series of actual corroborative fieldworks has been carried out from 25th July 2011 to 11th January 2013 (the actual field stay sums up to 300 days) in Western Mongolia. Core ethnographic information was collected from conversation with and observation of 50 - 60 informant masters at Altai (Алтаи), Tolbo (Толво), Sagsai (Сагсаи), and Ulaanhus (Улаанхус) counties in Bayan Ulgii Province. Through a “homestay” life together with an informant falconer family for 300 days at the Buteu Winter Pasture (BWP) in Sagsai (R-5 Bag), a major part of empirical analyses and observation consist of (1) concentrated participant observation, and (2) daily communication, ethnographic/semi-structured interviews with local eagle masters, and (3) own taming experience of a Golden Eagle that provided extensive understanding to provide a holistic ethnographic description of Altaic Kazakh falconry. In addition to the core study site, some research results of Kyrgyz falconers are partially referred to expand the view with comparative analysis [Soma 2007 & 2008].

As to cultural interpretation, classical British falconry sources, mostly published during the late 18th to the beginning of 20th century, are referred to for analysis and interpretation for each result of falconer’s ethno-ornithological recognition, traditional taming procedures, falconry

equipment, and hunting procedure, as well as the process of modernization. This research project provides quantitative data about the falconer's current living status.

1.4. Study Area and Informant Falconers

The study area of this project is Bayan Ulgii Province, the westernmost prefecture of Mongolia. The geographical territory is about 45,705m^2 [Баян-Өлгий Аймаг 2012]. The population is about 100,800 of which 78,000 (77.3%) is estimated to live off animal husbandry [National Statistical Office of Mongolia (NSO) 2012]. The Altaic Kazakh community in this area is one of the biggest minority groups in Mongolia. The Kazakh population reaches more than 86,000 (85.3% of prefectural population). The people migrated here mainly from the western part of China in the middle of the 19th century [Diener 2009; Barcus & Werner 2010: 212]. Due to geographical detachment from a core part of this world, even Central Asian sedentary societies, they have preserved some old Kazakh traditions - not only eagle falconry culture, but also a craft tradition of homemade embroidery and felt carpet production, seasonal transhumance, and horse-riding games, which have already disappeared from the other Kazakh communities in China and Kazakhstan. However, because of their living status regarded as "a diasporic ethnic minority group", their culture itself has been somewhat underestimated in the Mongolian society. In addition, the Kazakh community has been treated as "an uninvited guest" because of other Mongolian's negative impression gained from the Kazakh-Islamic culture and their religious attitudes together with little adaptation to Mongolian language and system which has been expanded nation-wide. Such a one-sided notion of "heterogeneity" alienates their society from other parts of Mongolia, even national-psychologically. Consequently, Kazakh's rich sources of intangible customs have not really been highly evaluated domestically.

The population of eagle masters in Bayan Ulgii Province was estimated at about 400 $_{persons}$ in the beginning of 21st century [Баян-Өлгий Аймаг 2003]. However, according to an own basic anthropological survey in 2011 - 2012, the number of masters/ eagle-owners is not more than 120 $_{persons}$ currently (as of December 2012). There are at least 28 $_{persons}$ (20 $_{HHs}$) living in Sagsai and its neighboring winter pastures [Soma 2011e]. Contemporary eagle falconers are divided into 2 types according to their living status: settlers and animal herders. In the main study site in Sagsai, 7$_{persons}$ (6 $_{HHs}$) are settled in the county center (sum-center) and the other 21 $_{persons}$ (18$_{HHs}$) are animal herders with seasonal transhumance in winter pastureland. The age of these eagle masters varies from 16 to 90 years old (as of September 2012). Sagsai County, the primary study site, is famous for an abundant population of eagle-owners and their excellent techniques. The condition is thus suitable for an initial embarkment. Afterwards, the study sites were gradually expanded to Ulaanhus, Altai, and Tolbo counties.

1.5. Thesis Outline and Hypotheses

The three above tasks (T01 - 03) are directly connected with each part of the thesis further elaborated below:

Part I. Historical Investigation: Chapters 2 and 3 aim at a literal contribution to a definition of Asian falconry culture as a distinctive intangible heritage of humanity. For this research task, archaeological evidence from Altai Mountains, Tienshan Mountain in Central Asia, central China, and Japan will provide a certain scale of historical depth of Asian falconry. This part is mainly designed within a framework of ethno-archaeology and culture history. This literal research will reveal the classical format of Asian falconry in ancient East and Central Asia, and inform about some reformation of the original falconry context along with transition from nomadic world to sedentary territory.

Part II. Ethnographic Narrative: Chapters 4 and 5 intend to create a holistic ethnographic narrative based on actual documentation of traditional arts and knowledge (TAK) of taming and hunting activities with Golden Eagle. This is also an urgent necessity against the disappearance of experienced elders and actual hunters in recent decades. In connection to the HAI, the ethno-ornithological perspective provides a core discourse for analysis of actually observed phenomena, practical handlings and relationships between the master and a captive eagle. This part extensively deals with both succeeded TAK by eagle masters and decline of hunting concurrently.

Part III. Cultural Preservation: Chapters 6 and 7 create a theoretical/ corroborative basis for sustainable preservation of Altaic Kazakh falconry for the future based on historical research findings and social research results described in Part I and II. The recent Altaic Kazakh community shows the socio-cultural upheavals in the revitalization of Altaic Kazakh identity with traditional falconry culture as an axis of ethnic representation. Chapter 6 analyses “direct actions” for preservation together with positive and negative social effects by a special ethnic festival “The Golden Eagle Festival” onto the local falconry and eagle-owners. Chapter 7 clarifies the importance of “an indirect sustaining factor” based on a close liaison between Altaic Kazakh falconry and animal herding livelihood as well as natural resource management. The former contribute to facilitation of feeding meat and riding horse, and the latter is inevitable especially to keep up Golden Eagle population and prey animals, and prevent reckless eagle traffics among local falconers and herders.

The thesis concludes with a pronounced warning against disappearance or discontinuation of Altaic Kazakh falconry unless systematic conservation activities are undertaken.

Presented study tasks are based on following hypotheses (HY01 - 05):

HY01: The classical mode of Asian falconry shares some common features with contemporary falconry practice, especially by Kyrgyz and Altaic Kazakhs as culture-historical lineage.

HY02: Altaic Kazakh falconers hold a series of distinctive TAK developed on their own, as well as common features of the world-wide falconry context, and even keep original disciplines.

HY03: The Golden Eagle Festivals brought about ambivalent impacts on the attitude and behavior of local falconry and eagle masters, by which circumstance was altered from the original context.

HY04: The socio-ecological basis and ecosystem of Altaic Kazakh falconry has had close ties with transhumant animal herding livelihood by local herders.

HY05: The masters and Golden Eagles have been in a positive cycle of interactive coexistence through each manning process and “the Capture and Release Custom” as an old convention.

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Part I

Cultural Depth of Asian Falconry

2. Earliest Representation of Human and Raptor Interaction

North and Central Asia

2.1. Introduction

2.1.1. Potential Birth Places of Ancient Falconry

Falconry/Hawking culture was invented in the central Asian highland roughly 2,500 years ago [Soma 2012a]. This innovative idea of raptor taming is differentiated from the domestication of livestock in human history. However, the enduring custom of human and raptor interaction suggests the significance of human invention to use animal power for hunting, which is a more complex activity than simple horse riding or, for example, the husbandry of cattle. The relationship is neither the same as with dogs nor livestock. Indeed, the relationship is distinctive in the process of Human-Animal Interactions (HAI) and Human-Animal Behavior (HAB) in human history. Falconry/Hawking culture used to be a practice recognised worldwide, not only because of the deep human-raptor interaction, but also as a cosmopolitan cultural heritage in East Asia. According to an ancient petroglyph in northern Altai [Кубарев, Цэвээндолж, & Якобсон 2005], Altaic Kazakhs (or, previously Kyrgyz) have kept up an eagle-tamed falconry for centuries for fur-acquisition, winter recreation and ethnic identity [Battulga 2007; Баттулга 2011; Soma 2012b–e, 2013a–d].

In the Victorian Age, some British falconers thought that the origins of falconry dated back to ancient Egypt due to the presence of mural paintings. The idea that European falconry may have an Eastern origin was ambiguously discussed through the 19th century, even by one of the most famous ornithologists, falconers, and historians, J. E. Harting [1883: 69]. One hypothesis was developed by the German ethno-agriculturalist E. Werth [1954], who believed that the cultural sphere of falconry (the taming of large-sized raptors) overlapped with that of “spade-used agriculture” due to the necessity for domestication of large-sized herbivores. In contrast to the Egyptian Origin Theory of falconry, H. Epstein [1943: 497–509], almost for the first time, mentioned the existence of falconry during the reign of Sargon II (722 – 705 B.C.) in the Assyrian Empire. J. V. Candy [2002: 161–201] also stated that the history of falconry may date back to around 2000 B.C. in reference to the falconer motif on the Kültepe site in central Anatolia (Turkey). Indeed, one of the earliest images of a falconer can be seen in “*Silver Vessel Terminating in the Forepart of a Stag*”, a ryton-style cup made by ancient Hittites at Bogazköy (Hattusha) during the 14th and 13th centuries, B.C. [The Metropolitan Museum of Art: 1989.281.10], and the “*Stella of Tarhunpiyas*” (the grave stone statue), perhaps made at

Marash in south-eastern Anatolia in 8000 B.C. [The Musée du Louvre: AO 19222]. However, the original birthplace of falconry has not been specified by archaeological findings.

Historical evidence of ancient falconry culture is still unknown, especially in terms of academic research and its classical style and context. Taking into consideration these ambiguities, this section analyses the classical style of Asian falconry culture, its potential birth places and cultural sphere based on the archaeological findings mainly from northern and central Asia. This study also shows ethnographic interpretations of these discoveries from anthropological and ornithological points of view. One of the main objectives of this study is to contribute to the understanding of the socio-cultural importance of falconry in the history of humankind and to develop a special program to sustain this culture for future generations.

2.1.2. Materials and Methods

The stand point of this chapter is an ethno-archaeological discourse based on two steps relating to compilation of archaeological information and ethnographic interpretation: (1) Archaeological images of raptors' predatory scenes and horse-riding falconers are collected mainly from northern and central Asia (Figure 1), and are reviewed according to their chronological order. All figures in this paper are originally drawn from cited images and own observations and falconry photos were taken by the author of this thesis; (2) Ethnographic interpretations are given for individual figures and motifs; ethnographic information is derived from fieldwork from 2006 to 2013, which was carried out near Lake Issyk–kul in Kyrgyz [Soma 2007, 2008] and the Altaic Kazakh communities in Mongolia (Figure 2) [Soma 2012a–f, 2013a–d].

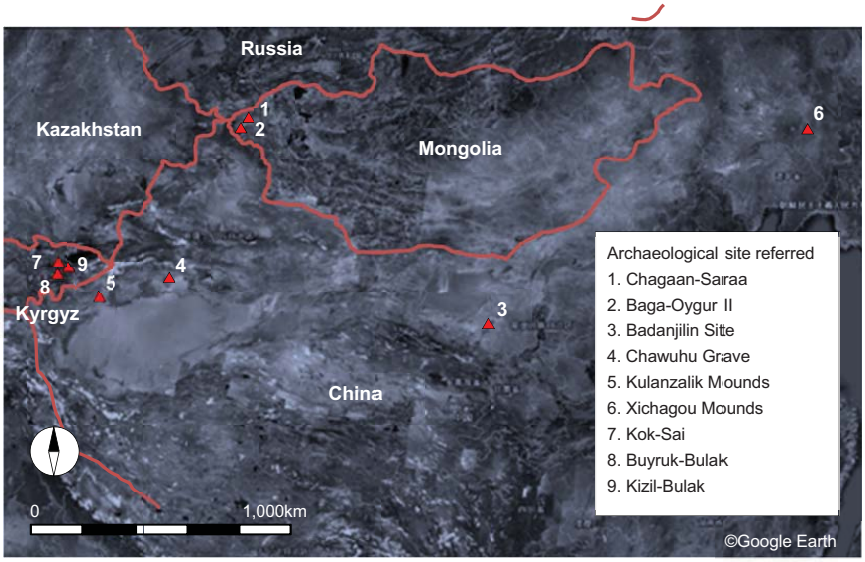

Figure 1. Archaeological sites of Central Asia where falconry-related artefacts were found.

The study attempts to shed light on the classical style of falconry, which differs from its current practice. As a result, its long-lasting tradition as a basis for intangible heritage will be also clarified from an ethno-archaeological point of view.

Figure 2. An Altaic Kazakh falconer in eagle training

2.2. Earliest Representations of Birds of Prey from 3,000 B.C.

2.2.1. The Hunting Scene of Raptors in the Northern Altai Mountains

It is difficult to establish whether falconry existed in ancient times only based on archaeological evidence. However, there are numerous ancient rock engravings of birds of prey in northern Asia [Кубарев, Цэвээндолж, & Якобсон 2005: 556]. Predatory scenes of birds of prey were one of the most important themes in ancient times in the north Altai Mountain regions (Western Mongolia). It seems to be no coincidence that there were different kinds of rock carvings of raptors in these areas, along with the preserved tradition of eagle-tamed falconry by local Altaic Kazakh herdsmen. These depictions are thought to date back to 3000–2000 B.C. It is unknown whether they had falconry customs or not, but great attention was paid to predatory scenes of raptors as the subject matter for rock art representation.

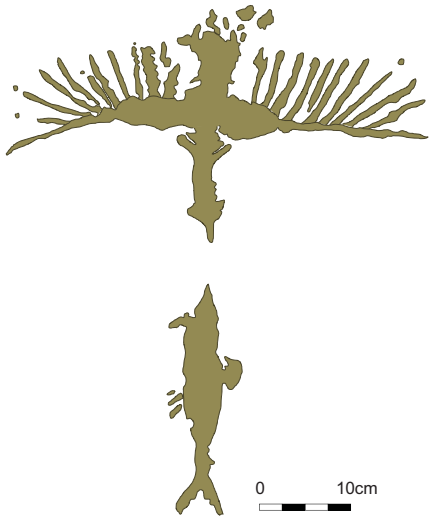

Figure 3. Predatory scene at Chagaan-Saraa (Mongolia).

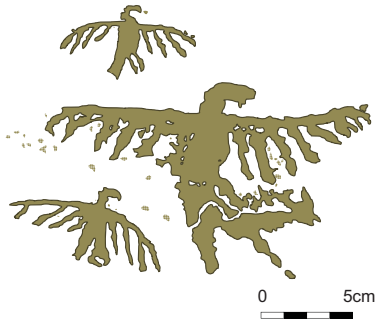

Figure 4. Predatory scene at Baga-Oygur II (Mongolia).

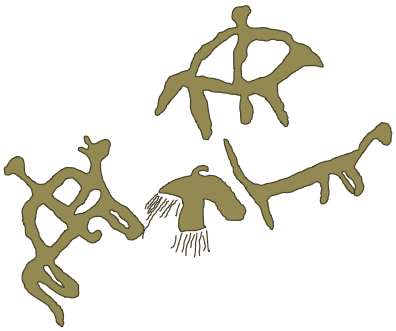

Figure 5. Petroglyph at the Badanjilin Desert (China).

Case NA–01: For example, a fishing-hunting scene by a predatory bird can be found at the Chagaan-Saraa (Цагаан-Салаа) petroglyph site (Figure 3). In terms of ornithological analysis, piscivorous (fish-eating) raptors were not abundant in western Mongolia. Falconry birds such as Golden Eagles (*Aquila chrysaetos daphanea*), Northern Goshawks (*Accipiter gentilis*), Sakers (*Falco cherrug*) and Peregrine Falcons (*Falco peregrinus*) are rarely considered to be usual fish-hunters in this region. It is very likely that this motif was either Palla's Fish-Eagle (*Haliaeetus leucoryphus*) or a White-Tailed Eagle (*Haliaeetus albicilla*), which are the only two fish-eating migratory birds in this area [Gombobaatar & Usukhjargal 2011: 42–43]. However, in early autumn, some local Altaic Kazakh falconers often feed their tamed eagles river fish (dace, trout, etc.).

Case NA–02: Furthermore, there is a unique hunting scene at the Baga-Oygur II (Вага–Ойгура II) petroglyph site (Figure 4) [Кубарев, Цэвээндолж, & Якобсон 2005: 366]. Three eagles are chasing a herbivore (a rabbit or deer), despite the fact that one can rarely meet such animals in the local natural surroundings. Golden Eagles and other hunting birds usually do not attack their prey with other birds due to the exclusive possession of their own territory. Gordon [1973: 156–157] believed that Golden Eagles sometimes hunt cooperatively in August and September, although that is not the usual case in Scotland. This assistive cooperation in a natural state is called "*make-hawk*", a British falconer's term. In connection with this fact, a falconry operation by Kyrgyz and

Altaic Kazakh was inevitably carried out with several hunting birds and falconers. The roles of hunting participants were divided into falconer(s) and prey-searcher(s) based on local tradition. This kind of hunting cooperation has been established to prevent zero-hit and poor-catch situations. If the primary attack by the first eagle fails, then the second eagle is permitted to attack, and, in case it also fails, the third one flies to attack [Soma 2007, 2013c]. Thus, it is considered that the cooperative hunting with eagles engraved in Baga-Oygur II does not happen very often in nature except for the practical falconry scene.

Case NA–03: An implicative scene is also found in a petroglyph at the Badanjilin Desert of the Alašan District in the Inner Mongolia Autonomous Region (Figure 5) [Gai 1998: 76 (Fig. 75)]. It seems to be a more concrete scene of hunting by two horsemen, who chase prey with a flying bird. However, the exact date when this drawing was created is unclear. The cooperative hunting by birds is also a known fishing technique with cormorant in China and Japan [Laufer 1931]. The fishing technique is thought to be a unique derivative custom from bird taming for hunting in human history.

2.2.2. Motif of Raptor Predatory in Scythian Metalwork

The archaeological evidence of hawk bones found in human burial sites implies a more concrete connection between humans and raptors.

Case NA–04: In the southern foothills of the Tienshan Mountains (contemporary Xingjian Uygur Autonomous), a set of four hawk talons were unearthed from funeral goods in a group burial chamber (M113) at the Chawuhu Ancient Graveyard No. 4, established in the 10th century, B.C. (Heqin Prefecture, Bayangolin Autonomous) [Xingjian Wenwu-Kaogu Yanjiusuo 1999: 80].

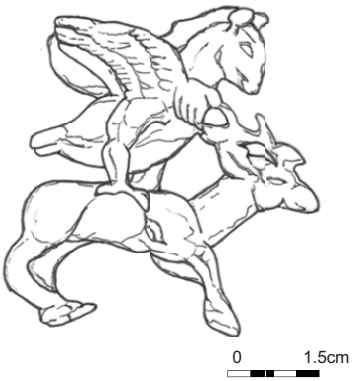

Figure 6. A gold plaque found from Kulanzalik Burial Mounds (China).

Case NA–05: In addition, hawk skeletons were also found in the Kulanzalik Burial Mounds, which were made during the 5th century B.C. (Aheqi Prefecture, Kizil-su Kyrgyz Autonomous) [Xingjian Wenwu-Kaogu Yanjiusuo 1995: 20–28]. It was estimated that these bones belonged to 12 hawks, which were buried together in a small mound (93AK–M5) situated on the north-eastern side of (so called) "Adult Males' Mound".

Case NA–06: Also, a gold plaque depicting a hunting scene of a predatory bird and a deer was found in the other burial chamber (93AK–M5; no. C) (Figure 6). It supports evidence of captive predatory birds in this period and area.

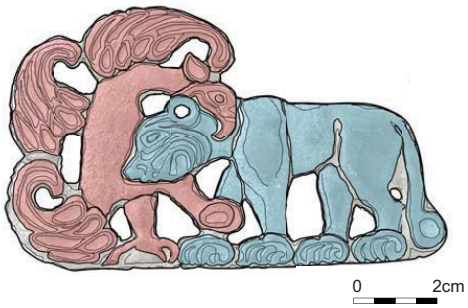

Figure 7. A eagle and Snow Leopard (?)

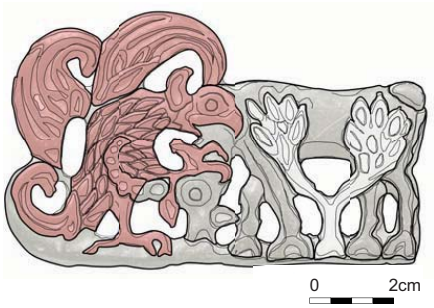

Figure 8. An eagle predatory on Ibex

Case NA–07 & Case NA–08: Similarly, the central concern of Scythian art is local animals that dwell in the northern Eurasian steppe belt. Evidently, the art of the Scythians was derived from deep observations and analysis of wild animals and raptors. After 5000 B.C., the animal conflict motif, such as a struggling raptor and feline (probably a Golden Eagle and Snow Leopard (Figure 7)) [Tokyo National Museum 1997: 126] or ibex (Figure 8) [Bunker 2002: 103, 109] extensively characterised the main Scythian subject matters, probably made in southern Siberia. The motif was created to describe both realistic and mystical features, of which the cultural linkage might have been succeeded from former petroglyph art traditions. These two examples well expressed the hunting scene of the eagle on the ground, which struck out to grab the prey by its leg. Despite the fact that there are no records of a raptor naturally hunting a Snow Leopard, it is believed that only a Golden Eagle could prey on large-sized herbivores like Red Deer, Siberian Ibex, goats, antelope [Goodwin 1977: 789–790] and coyotes [Mason 2000: 244–245]. There were times when grey wolves were often hunted by tamed eagles in the local horse-riding falconry practice. Altai-Kazakh falconers sometimes captured a Palla's Cat (*Felis manul*), the Mongolian wild cat. Therefore, these motifs might have been produced via the imagination of ancient local people.

According to these archaeological findings, one can partially understand that ancient people in north and north-eastern Asia had strong concerns for local birds of prey. And, in fact, they had started to capture or tame birds nearly 3000 years ago, whether falconry was practiced at that time or not.

2.3. The Image of Horse-Riding Falconers:

This motif prevailed from the 3rd Century B.C. to the 8th Century

2.3.1. Ancient Northern China

The visual representations of a falconer can be traced back to 3000 B.C., the period during the rise of the Hun Empire and the spread of its hegemony and nomadic culture along the northern territory of Eurasia.

Case NA–09: The image of a falconer was found in Xichagou Ancient Grave Mounds in north-eastern China (northeast Xifeng, Liaoning Province) (Figure 9). The bronze belt buckle depicts two galloping horsemen [Bunker, Kawami, & Linduff 1997: 79–80 (Fig. A112)]. The latter horseman perches a hawk (or falcon) on his right hand. This is the same style of horse riding falconry as in the Kyrgyz and Kazakh communities. The buckle is thought to be an artefact of nomadic taste produced around 3000 B.C., the end of the Warring States Period in China. This is, therefore, probably one of the earliest figures of the horse-riding falconer in Asia.

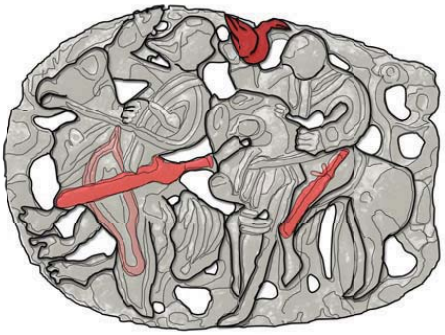

Figure 9. Bronze belt buckle from Xichagou Mounds (China).

2.3.2. Tien-Shan Mountains (in Eastern Kyrgyz)

Case NA–10 – NA–14: The figure of a falconer on horseback became abundant during the Turkish (Göktürk) period (6th century) along the northern Tienshan Mountains. In the Khaganate Period (during the 7th – 8th centuries), falconer images were depicted on rock canvas at Kok-Sai (Кёк-Сай) (Figure 10, 11, & 12), Buyruk-Bulak (Бёйрёк-Булак) (Figure 13) and Kizil-Bulak (Кызыл-Булак) petroglyph sites (Figure 14) in Kyrgyz Republic [Табалдиев & Солтобаев 2002: 68–73; Табалдиев & Жолдошов 2003]. These rock carvings of hunting scenes with birds of prey are very similar in their style to the contemporary practice of Altaic Kazakh falconry (see Figure 2). Some falconer's equipment is also recognised in these

Figure 10. A figure at Kok-sai (i)

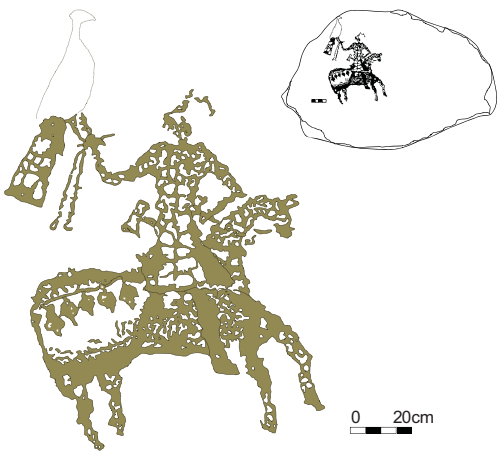

Figure 11. A figure at Kok-sai (ii)

pictures. In Figure 10, a head of an eagle is portrayed as round, as if covered by a hood (called *Tomoga* in Kazakh) before hunting (Figure 15). In Figure 11, a clear depiction of a jess (*Ayak-baw*), a set of leather leg straps to hold a raptor, is observed as if the eagle is in the flight motion (Figure 16). In addition, there is an unclear depiction of an arm-brace (*Baldak*) as well in Figure 12. It is a Y-shaped pillar used on the right wrist while on horseback, used only by Kyrgyz and Kazakh falconers (Figure 17). In addition, the falconer's gauntlet (*Bialai*) should be present, despite the fact that it is unrecognisable in the images (Figure 18) (detailed in Part II, 4.6).

Most of the depicted falconers probably held a Golden Eagle of almost their body size, except Figure 14. In this image, the falconer is assumed to hold a relatively small raptor (a hawk or falcon) on his left wrist. The falconer is probably targeting four waterfowl (geese) and one heron (or crane) walking in a line in front of the hunter. In the case of Kyrgyz and Kazakh falconry, game birds are not considered usual hunting targets. In addition, it is said by local falconers that Golden Eagles are not good at hunting waterfowls and small mammals because of their heavy body size. One can interpret this image as the scene of "hawking" or "fowling" by a tamed, long-winged or short-winged raptor (possibly, a Goshawk, Saker Falcon, or Peregrine).

Figure 12. A figure at Kok-sai (iii)

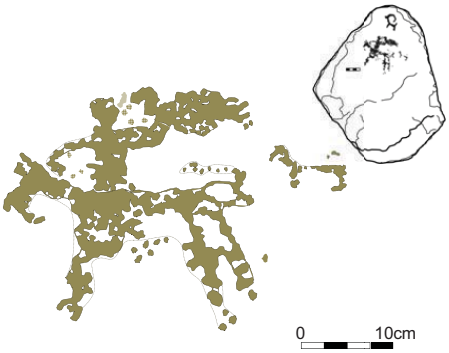

Figure 13. A figure at Kizil-Bulak

Figure 14. A figure at Buyruk-Bulak

Figure 15. Hood (*Tomoga*)

Figure 16. Jess (*Ayak-baw*)

Figure 17. Arm-brace for horse riding (*Baldak*)

Figure 18. Gantlet (*Bialai*)

For the additional analysis, three falconers depicted in NA-10 - 12 (Figure 10, 11, & 12) perch their birds on their right hands, and two others in NA-13 - 14 (Figure 13, & 14) are left-handed. Horse riders normally perch their bird on their right wrist. Kyrgyz and Kazakh falconers also have a tradition of holding their raptor on their right wrist. On the contrary, European and Asian falconries in non-nomadic societies are usually left-handed in their style.

Case NA–15: An early Persian falconer figure is seen on a small bronze plaque made during the 7th or 8th century, probably from the post-Sasanian or Umayyad period (Figure 19) [Epstein 1943: 498 (Fig. II)]. This plaque also shows left-handed style falconry which represents a highly equipped falconer with his armour and horse bridle bells in front.

2.4. Discussion

2.4.1. Observations in Nature and Avifauna by Ancient Pastoralists

The earliest representation of raptors shows a deep curiosity towards local avifauna by ancient pastoralists in eastern Eurasia. Most of them were dynamic hunting scenes, with

should have fascinated local residents. Depicted hunting targets are river fish, small mammals, deer, ibex and felines, which are targeted by a Golden Eagle. As to NA–01 (Figure 2), there is a large indigenous river fish present (such as a Taimen (*Hocho hocho*) or Mongolian trout). This type of fish could potentially have been one of the hunting targets of the local raptors in ancient times. As is depicted in NA–05 and NA–07, the Golden Eagle rarely kills large herbivores such a deer and elk in Canada. Some clever Golden Eagles assault large herbivores at the edge of a cliff and may pull them down to the bottom of the valley. The feline depicted in NA–06 (Figure 7) looks like a Snow Leopard; nevertheless, eagles would not be able to hunt such prey. However, Golden Eagles occasionally hunt small wild and house cats. It might be a materialisation of ancient herders' imaginary that huge raptors could possibly hunt a Snow Leopard or Lynx. Overall, ancient pastoralists seem to have had great curiosity towards the indigenous raptors with figurative respects of power and deity in nature.

Figure 19. A bronze plaque from Iran

2.4.2. The Classical Manner of Asian Falconry

Archaeological figures give clues to understand the classical format of falconry in ancient northern Eurasia. One of the characteristics in ancient time is that classical falconry began by perching a hunting bird on the right arm. Some probable reasons of this right-handed style include the idea (NA–09 (Figure 9)) that ancient nomadic horse riders attached and hung their bows, sword and equipment on their left side while on horseback. Further decisive factors are based on the manner of riding a horse. Steppe herdsmen usually grabbed the reins firmly with their left hand. According to paintings found in India, Persia and Arab regions, some noble falconers who belonged to the upper class held their hunting birds on their left wrist, even while on horseback. As is seen in NA–14 (Figure 19), falconry might be practiced in both standing and horse riding postures in these regions, not later than the 7th century. It is probable that the servants and attendants might have handed over a bird to their master after they mounted their horse (refer to "*Prince Akbar and Noblemen Hawking, Probably Accompanied by His Guardian Bairam Khan*" [The Metropolitan Museum of Art: SL.17.2011.1.2]. Thus, it is assumed that left-handed style falconry was an alteration made by sedentary falconers, which they derived from the noble way or dismounted style of falconry.

Further, classical falconry should be carried out essentially on horseback in the pastoralist community, especially by Kyrgyz and Altaic Kazakhs. Falconer figures were always depicted on horseback (NA–10 – 14 (Figure 10–14)) in Kyrgyz Tienshan regions. In addition, depicted

figures seem to be intentionally stressed next to the size of hunting birds, including large-sized raptors such as the Golden Eagle. This style of eagle falconry on horseback is almost identical to contemporary Kyrgyz and Altaic Kazakh falconry. Hence, it is not a coincidence that Kyrgyz horse riding falconry, mainly with tamed Golden Eagles for fox-hunting, has been well preserved until the 1990's in the same regions. According to archaeological evidence, it is highly probable that the style of horse riding falconry (with tamed Golden Eagles in Kyrgyz and Altaic Kazakhs) was carried out for more than 2,300 years based on traditional lineage from ancient nomadic pastoralists. The tradition of eagle-tamed falconry may have continued until the 7th or 8th century in the Tienshan mountain regions and the northern Altai Mountains.

2.4.3. Socio–Ecological Functions of Ancient Falconry

Anthropologically speaking, winter hunting practice is inevitable in a nomadic, animal-herding society to secure food for subsistence and animal fur for trading and making clothing. It is driven by a limited availability of meat and dairy products, and the lack of material items in a pastoralist community. According to the local life in the Northern Altai Mountains, livestock such as sheep, goats and cows lose 1/3 of their body weight during winter. Milk from each cow is also reduced from 4,000cc to 1,000cc per day, on average. Therefore, falconry with tamed eagles would have presumably played a crucial role in securing animal fur and wild game in winter.

However, contemporary Kyrgyz and Kazakh falconry is/was not practiced for food consuming purposes; it was practiced for fur acquisition from fox-hunting, which was used for trade and other private purposes. According to the environmental conditions, including avifauna, it is very hard to find waterfowls and game birds for food in the winter. As far as the ethnographic narrative observed in Altaic Kazakh falconry in the Altai regions is concerned, falconers would also not hunt lagomorphs as their central target. A similar situation was also observed on the southern shore of the Lake Issyk-kul region. It is believed that the food acquisition of the classical mode of falconry is a rather minor function in the local nature of Tienshan and the Altai mountainous regions when compared to European falconry. Therefore, from its early stage, falconry was well developed with versatile intentions for recreation, sport-hunting, rituals or fur-acquisition, as well as direct/indirect connections with food obtaining purposes for livelihood.

2.5. Conclusions

Ancient Clues for Sustaining Falconry for the Future

This section concentrated on the compilation of the earliest representations of predatory scenes by the raptors and falconer figures in north and central Eurasia. Some ethnographic

interpretations are also a central theme in reference to fieldwork in contemporary Kyrgyz and Altaic Kazakh falconers. Archaeological representations implicate (1) Historical Depth: ethno-archaeological analyses clarify the historical depth of Asian falconry culture that dates back to approximately 2,300 years ago; (2) Initial Format of Asian Falconry: especially its initial form seemed to be carried out on horseback. Seeing the local environment and avifauna, it is also possible that ancient falconry may have been developed for symbolic and ritual functions rather than for practical food acquisition; and (3) Potential Cultural Lineage: archaeologically speaking, the geographic sphere of distribution of falconry representation coincides with nomad territory in northern Asia. Thus, falconry, or taming predatory birds, is deeply anchored in the animal-herding life style. The archaeological materials also clarify that falconry was easily conveyed over the bounds of culture, region and society.

A central contribution of this ethno-archaeological research is the establishment of the significance of horse-riding falconry culture in north and central Eurasia. The presence of horse-riding falconer figures in the Tienshan regions confirms the historical depth of falconry, which has been transmitted over generations in Kyrgyz and Altaic Kazakh societies for centuries. Whether by diffusion or by independent occurrence, Eurasian-wide falconry has been in practice for more than 1,200 years.

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3. *Falconer Figures in Ancient East Asia*

China and Japan

3.1. Introduction

3.1.1. Falconry and its Eurasian-Wide Adaptability

As seen in the previous section, the outstanding legacy of Asian falconry/hawking was presumably derived from a prior invention by nomadic pastoralists about 2,500 years ago in the central Eurasian highland. On the other hand, in sedentary living spheres in Eastern Asia, specific records and inscriptions about falconry are scarce before the age of the Han Empire (202 B.C.). Rather, falconry and falconer representations were originally depicted in the magical and realistic scenes of stonewall carvings during the 1st and 2nd centuries, and on the inside panels of the funeral chamber for nobles in Shandong Province [Zhongguo Huaxiangshi-Quanji vol. 2 (ZHW 2) 2000: 40]. Afterwards, falconry was brought to the east end of Eurasia, the Japanese Archipelagos, around the 6th century according to the Haniwa figurines in the Tumulus Period. Also, it is believed that falconry was transmitted to Europe after the intrusion of the Hunnish people at the end of the Roman Empire. Falconry might have started in Britain in the 8th century during the reign of Ethelbert of the Saxon monarch in the year 760, by evidence from an old letter to the German King [Hamilton 1860: 172–173]. Whether by cultural transmission or independent occurrence, falconry had become a stable socio-cultural domain at both ends of Eurasia since the 8th century.

This section begins with a brief introduction on the cultural history of early falconry in East Asia. Specifically, there is a focus on the analyses of archaeological depictions of falconry and falconer representation unearthed from China and Japan combined with contemporary ethnography of Kyrgyz and Altaic Kazakh falconry. This section is going to answer initial questions: (1) “When was Asian falconry begun?” and (2) “Why is it discontinued now?” Eventually, substantial reformations and differentiations from “nomad’s eagle falconry” brought about into “sedentary sport falconry” will become a central concern in this article.

3.1.2. Materials and Methods

The research method is based on an ethno-archaeological format. Firstly, archaeological representations (Case EA-01 – 08) are collected and assembled from report papers, books and museum sources in China and Japan. Secondly, anthropological and ethno-ornithological

interpretation will be given with reference to ethnography in contemporary Kyrgyz and Altaic Kazakh falconry. This ethnographic research was designed with concentrated participant observations and semi-structured interviews carried out at the Lake Issyk-Kul Province in Kyrgyz (May–June and October–November 2006), and Bayan Ulgii (Bayan Ölgii/ Баян-Өлгий) prefecture in western Mongolia (July 2011 – January 2013) [detailed in Part II].

Through a contingency plan, this paper attempts to discover a deeper understanding of actual and/or conceptual boundaries between "nomad's eagle falconry (for actual hunting)" and "sedentary game falconry (for sport/recreation)", which experienced reformative processes and have adapted to fit into a sedentary world.

3.2. Ancient China:

Falconry Representations in the Later Han Dynasty

A figure of early falconry was first seen in the bronze belt buckle cast in north-western China around 3000 B.C. (Soma 2012a). During the later Han Dynasty period, falconer motifs were gradually seen in decorative carvings on the stone wall of high class members' graves, especially in Shantong and Shaanxi areas from 2000 A.D. Below, five stone carvings (EA-01 – 05) indicate a presence of falconry and falconers during the later Han Dynasty period.

Case EA-01: "*Shoulie, Gōngniu–Didou Huaxiang*" (circa. 89–146), excavated from Zoucheng, Shandong region, shows two human figures with a raptor on one of the figures' left arm (Figure 20) [ZHW 2. 2000: 78–79]. In addition, the other figure seems to release a large bird to a rabbit. Also, other raptors and probable quarries or game birds (pheasants) are well expressed to create a real scenery inside the hunting field. The falconer figures wear Chinese tunics with crowns, which indicate Chinese high class. This picture represents a scene of entertaining sport falconry in a garden or palace with subordinates.

Case EA-02: "*Shoulie, Cheqichuxing Huaxiang*" (89–189) found at Weishan, Shandong, also shows a concrete figure of three falconer participants in a hunting column (Figure 21) [ZHW 2. 2000: 40–41]. A huge raptor, presumably Golden Eagle size, perches on his right hand. This style is defined apparently as a nomadic pastoralist's way. They are wearing trousers with long boots. In addition, there are four hunting dogs in the former part of the column. Actually, two of the men are in assaulting motion on their prey. Their slender bodies and constricted waists are highly similar to a sight-hound dog in the analogy of *Saluki* or *Taigan* (*Kyrgyz Bolzoi*), a Mongolian native species. Golden Eagle falconry and beaters by sight-hounds are originally from the nomadic pastoralist's way of life. Eventually, this carving shows that participant falconers are "*Huren"* (outer tribes surrounding ancient China) hunters

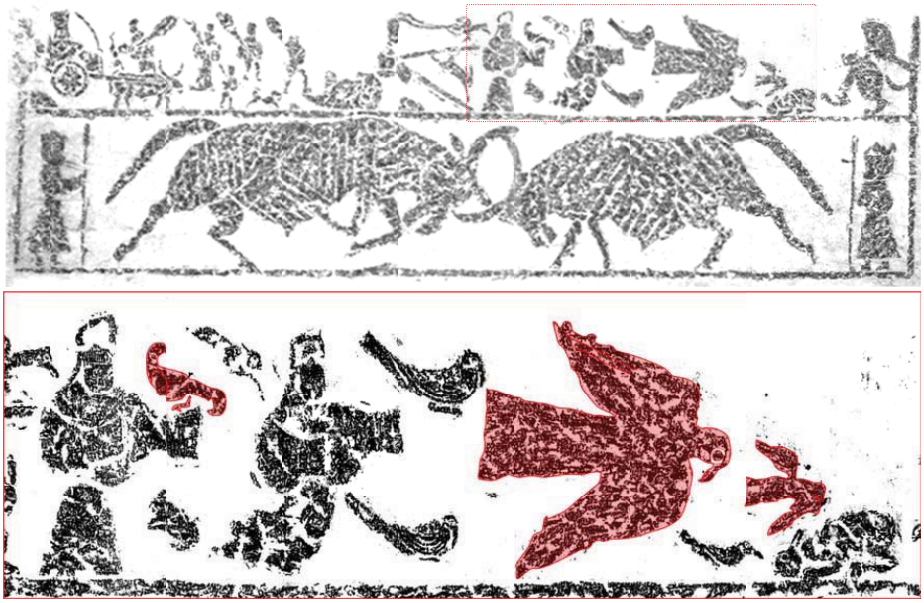

Figure 20. A stone carving "*Shoulie, Gōngniu-Didou Huaxiang* (狩猟, 公牛抵鬥畫像)"

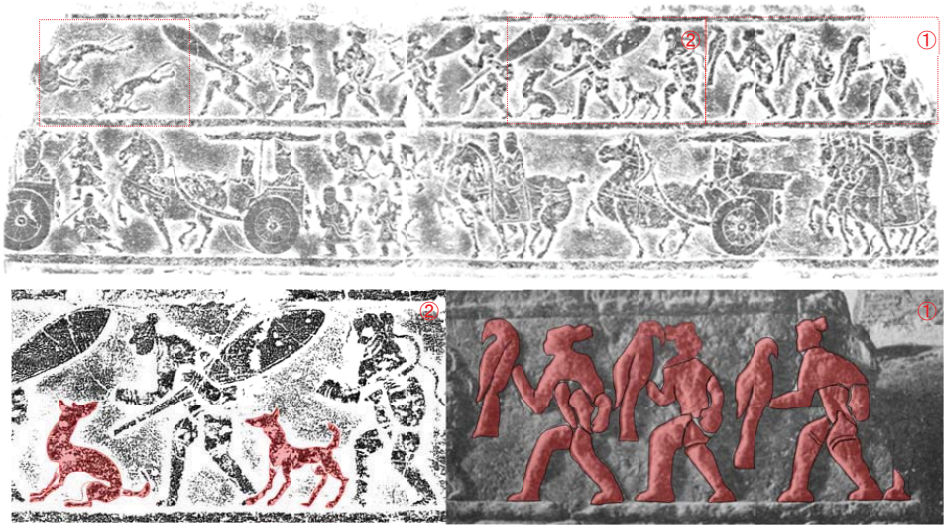

Figure 21. A stone carving "*Shoulie, Cheqichuxing Huaxiang* (狩猟, 車騎出行畫像)"

who had excellent skills in taming eagles and were operating eagle falconry in cooperation with sight-hounds as beaters.

Case EA-03: "*Chuxing, Xianfu, Lewu Huaxiang*" (89–189) depicts two horse riding falconers galloping with two birds (Figure 22) [ZHW 2. 2000: 4–5]. This picture may confirm the

presence of horse riding falconry in ancient China. The style is highly pastoralist for hunting, even for today. In addition, the shape of the raptor's rectrix (tail) is concave, which seems to be of the falcon type, not the hawk type. The bent wings on the front bird also belong to a falcon type raptor. From this carving, it could be hypothesised that both hawk and falcon types might have been tamed for hunting birds in this period.

Case EA-04: "*Yulin Chenxing Mumenmei Huaxiang*" (25–220), found in Yulin city, Shaanxi Province, also depicts a scene of falconry on horseback in the middle of scattering prey animals (Figure 23) [ZHW 5. 2000: 4–5]. A human figure is seen wearing a Chinese tunic with a crown. In fact, horseback falconry might also have been carried out not only by nomadic animal pastoralists, but also by high-class people in ancient China. There are a large number of hunting participants, including horsemen, beaters, net-holders and cart-drivers to intimidate prey animals. Such a massive cavalcade was one of the typical styles of royal-scale falconry in ancient Asia.

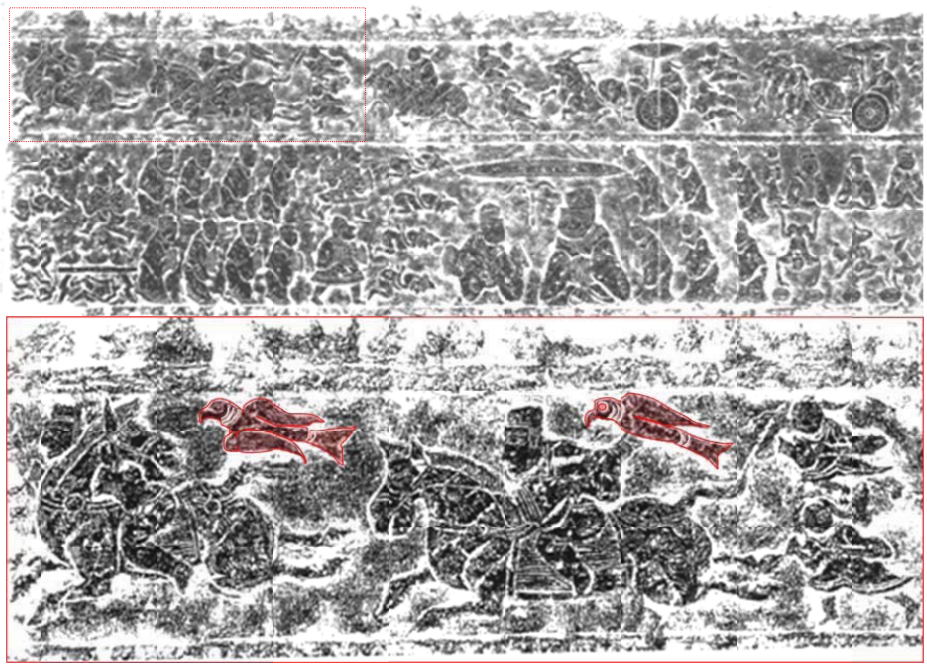

Figure 22. A stone carving "*Chuxing, Xianfu, Lewu Huaxiang* (出行, 獻俘, 樂舞畫像) "

Case EA-05: "*Kongmen–Dizi, Shoulie Huaxiang*" (25–220) is an additional example that describes a scene of display falconry in front of the falconer's master on the chair (Figure 24) [ZHW 2. 2000: 58–59]. One of the two birds is going to annihilate a small prey. On the left side, flap-eared dogs are depicted on both sides of the carving.

Figure 23. A stone carving "*Yulin Chenxing Mumenmei Huaxiang* (榆林陳興墓門楣畫像)"

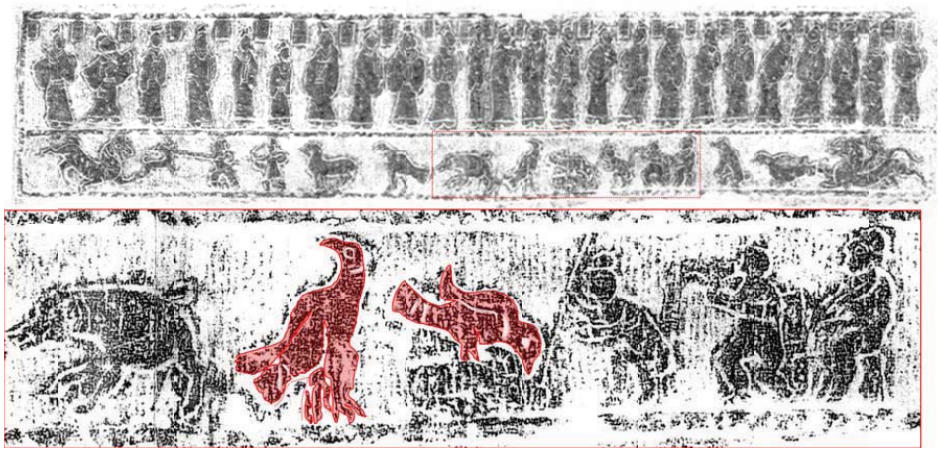

Figure 24. A stone carving "*Kongmen-Dizi, Shoulie Huaxiang* (孔門弟子, 狩獵畫像)"

3.3. Ancient Japan:

Falconer Figurines in the Kofun Period

Japanese falconry is thought to have started around the 4th century on behalf of cultural contact with the royal family of Kudara (Paekche; an ancient Korean kingdom). However, a concrete figure of falconers initially materialised in the 6th century in the Kofun Period of

Japan. Archaeological vestiges of only four Haniwa figurines are available (Case NA-06 – 09), and are necessary for describing ancient falconry in Japan.

Case EA–06: *A Falconer Haniwa Figurine*, excavated from Okuman-yama Kohun Mound (Wakiya no.1 Grave) at Wakiya, Ohta City, Gunma Prefecture, is one of the perfect models describing the earliest falconer (Figure 25) [Gumma Prefecture Ota City Board of Education 1999: 8, 13–14, 19].

Case EA-07: *A Falconer Haniwa Figurine*, also found in Huchina, Sakai-cho, Sawa-gun, Gunma Prefecture (8 km west from Okuman-yama Kohun Mound) was produced in a similar manner to the Okuman figurine (Figure 26). Distinctively, the bird on this figurine is facing in the opposite direction, which is unusual even in actual falconry.

Case EA-08: *A Falconer Haniwa Figurine*, in a collection at the Museum of Sitennou-ji, was also manufactured in a similar manner to the two previous examples (Figure 27). However, the site where it was unearthed is unknown.

Case EA-09: Additionally, only the falconer's left arm was excavated from Imashirozuka Burial Mound at Takatsuki, Osaka Prefecture (Figure 28) [Takatsuki City Board of Education 2001] (in a collection at the Takatsuki City Board of Education).

All of these falconer figures were manufactured roughly at the end of the 6th century. The manner, style and details of figures found from this period were mostly in a form of perfection. As for these figures, a bell is clearly detected in the tail of the bird. This is one of oldest pieces of evidence representing a bell installation in falconry culture. In addition, figures EA-06 and EA-07 probably hang feed poach on their left belts. Incidentally, a bell would not be attached to hunting birds in nomadic pastoralist communities. According to falconry equipment, their costume and equipment were similar to what warriors wore. It is understandable that early Japanese falconry might also have had a deep connection with masculinity and the warrior class' moral or symbol.

3.4. Discussion

3.4.1. Comparison with Eagle Falconry in Kyrgyz and Altaic Kazakhs

As regards observations on early illustrations of falconer figures in China and Japan, the context and format of falconry are apparently different from "in situ" classical falconry practiced by nomadic animal herders. Namely, a formation process from "nomad's eagle falconry" to "sport hunting", "royal/recreational/game falconry" are observed in every phase in order for it to fit into a sedentary world.

Figure 25. A figurine from Okuman-yama Kohun Mound

Figure 26. A figurine from Gunma Prefecture

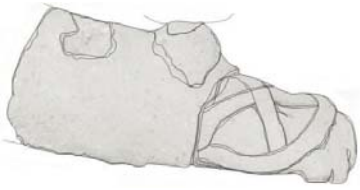

Figure 28. A figurine from Imashirozuka Burial Mound

Figure 27. A figurine in a collection at the Museum of Sitennou-ji

As for traditional Kyrgyz and Altaic Kazakh's falconry culture, their distinctive customs and traditions are considered to be a "classical mode" of modern falconry. Falconers only tame female Golden Eagles (*Aquila chrysaetos daphanea*) and carry them on horseback (Figure 29). This is never seen in other places. This "horse-riding eagle falconry" was not developed for food acquisition, but for fur acquisition in the daily living context of an animal-herding society. Warm animal furs are essential for making ethnic clothes and headgear to wear during a severe winter. Their hunting practice needs many hunting participants, including a primary falconer, secondary falconer and beater(s) [Soma 2012e, 2013c]. An initial reason for this traditional teamwork style is linked to a local specialisation for hunting targets, primarily Red Fox (*Vulpes vulpes*) and Corsac Fox (*Vulpes corsac*).

To create sedentary, socio-ecological criteria for falconry when detaching from nomadic pastoralist's ways, reformations such as the following had to be made in the discipline: (1) Falconry without horseback, (2) Left-handed style, (3) Selection from small-size birds of prey, (4) Introduction of dogs as beaters, and (5) Institutionalization and exclusivity for higher societal strata.

3.4.2. Reintroduction to "the Sedentary Falconry"

(1) Falconry without Horseback: Horse riding was not required in sedentary falconry due to omission of access to hunting mountains to search prey. For example, during a day of hunting of Altaic Kazakhs, the total traveling distance reaches more than 20 km, and total ascend/descend area of 450 m [Soma 2013c]. It would become an extreme physical burden to climb the mountain with a Golden Eagle, which can weigh up to 6 kg (Figure 30). On the other hand, in the sedentary world, falconers were generally on a higher social stratum and eventually it was not necessary for them to make efforts to move to the hunting field by themselves. Due to changes in available hunting fields, horses would be abandoned from practice. However, horseback falconry was continued for the special techniques in the later Han period; yet, afterwards, it disappeared entirely from Japan.

Figure 29. Kyrgyz falconers during hunting excursion

(2) Left-handed Style: In connection with the abandonment of the horse riding style, the perching hand was shifted from right- to left-handed style. This is because nomadic horse riders normally would ride on a horse from the left side while gripping the reins with his left

hand. The horse is also handled only by the swing of his left hand. In addition, ancient riders hung their bow, arrow, sword and equipment on the left side of their horse [Soma 2012a]. Eventually, the right-handed style became a common manner in nomadic pastoralists, which is still seen in Kyrgyz and Kazakh falconry today. However, the left-handed style was suitable for handling birds in a standing posture. In addition, the left-hand style gradually took a firm hold in sedentary falconry, even in medieval Arab and Europe. According to Chinese stone carvings, both right and left hand perching style might have existed due to some cases and hunting styles. In later periods, early Japanese falconry has adapted the left-handed style.

Figure 30. An eagle master searching prey in craggy hunting mountains

(3) Selection of Small Size Birds of Prey: One significant change is that the Golden Eagle has never been used in any sport falconry outside of nomad territory. Accipitriformes ('the short-winged' raptors such as Goshawks, Harriers, Sparrows and Hawks) and Falconiforms ('the long-winged' raptors such as Peregrines, Sakers and Lanners) became the most preferred birds for taming and hunting a variety of quarry, game-birds and small mammals. In fact, Shafer [1958: 315] believed that eagles were tamed in the royal court of the Tang Dynasty. However, the purpose was considered to be for symbolic utility. Likewise, visible appreciation was important for entertainment; people enjoyed watching their dynamic flight and the chasing of prey. Potential reasons for this replacement can be explained by the following causes. First, a Golden Eagle is awkward to handle due to its natural character and body size. Golden Eagles are far from docile and have an unpredictable ardour for hunting. In addition, it is slow during initial flight. Furthermore, one Golden Eagle consumes a large amount of food. An annual amount of food for the eagle annually is roughly 3 – 9 sheep. As a result, falconers do not want to pay the expenditure to provide the necessary food for its maintenance. In fact, some contemporary Kyrgyz falconers use Goshawks (Figure 31) for more recreational purposes, while Altaic Kazakhs in western Mongolia never use them. In addition, they also have a volatile temper. Even falconry textbooks recommended against its training [Ford

Figure 31. Goshawk tamed by Kyrgyz falconer

1982: 113–114]. According to a skilled Kyrgyz falconer, to tame a Goshawk and Peregrine normally takes 7 – 10 days while Golden Eagles need at least 30 – 45 days [Soma 2007, 2008]. The awkward nature of a Golden Eagle was not appropriate for sedentary falconry, and, therefore, it was not introduced for hunting activities elsewhere.

(4) Hound Dogs as Beaters: Both sight-hounds (Figure 32) and falconry might have been derived from outside China by nomadic pastoralists. The introduction of hounds as beaters or hunting assistants was thoroughly expressed in Chinese stone carvings. It could have saved huge painstaking prey-search efforts and the encounter rate with wild animals should have risen. One of the central concerns in royal or sport falconry might be how to increase the encounter rate with prey animals in the hunting field. In fact, during a classical hunting operation in the Tienshan and Altai regions, almost all efforts would be spent searching for prey. It means that cooperation with beater(s) (called "*Kagosh*" in Kazakh) is inevitable, particularly in Altaic Kazakh falconry. In any case, at least one beater has to participate in each hunting operation.

Figure 32. A superior hunting dog "Taigan"

As to cooperative hunting in Altaic Kazakhs, a falconer goes to the top of a mountain, while the beater stays on the foothill. Then, the beater intentionally starts to move loudly, galloping on horseback and shouting in order to intimidate foxes and other wild animals and make them leave their hiding places. The falconer releases his eagle when a target is recognised. In a local way, a chief beater makes most of the forthcoming decisions and usually gives operative commands to other falconers such as movements and timing for releasing the eagle towards a target. The beater usually needs to be an experienced hunter or a falconer. He is considered "the brain" of the hunting operation. Therefore, in traditional rule by Altaic Kazakh falconers, a beater is allowed to obtain the initial prey prior to other participants [Soma 2013c].

In comparison, the hounds, the ordinary hunting assistant in Europe, were no longer used in traditional Kyrgyz and Kazakh falconry. Atkinson [1858] also recorded in his "*Oriental and Western Siberia*" that hounds would not accompany falconers. However, in ancient Chinese (and medieval British) falconry, sight-hounds had played an important role (the same as human beaters in the hunting scene) since the later Han Dynasty. Even centuries later, a combination of falconry and hunting hounds was detected in the wall paintings of the Lizhongrun grave during the Tang Dynasty (ca. the end of 7th century). The cooperation of hounds with hunting birds might be defined as an innovative idea in sedentary falconry.

Unless hound dogs or beaters cooperated, falconry might have become very painstaking and time-consuming. Consequently, collaboration with beaters, “prey-searching participants” whether humans or dogs, was inevitable in a practice of royal falconry due to its level of entertainment as a pure game, sport, or recreation.

(5) Institutionalisation and Exclusivity by higher strata: Lastly, sedentary falconry established particular institutionalization and legalised restrictions for participation to falconry. Such social regulations had always differentiated falconry from other kinds of sports or athletic activities. In order to protect or to privatise all hunting resources such as raptors and their eggs, quarries and hunting fields are protected with legal regulations. The sedentary society, such as in the case of the Liao Dynasty of China (ca. 10th century), the Tokugawa Shogunate of Japan (ca. 17th – 19th century), and medieval Britain (ca. 16th – 18th century) higher strata exclusively regulated participation in falconry activities in order to control or to privatise hunting resources from the secular community. Raptors’ eyrie or potential prey birds and animals were strictly protected. If violated, those who did so would suffer severe punishment. Exclusive or limited participation would regulate extensive social permeation of falconry customs to secular communities in Asia, despite the much earlier history in China and Japan than in Europe.

It is almost impossible to describe the overall social and legal system regarding falconry in ancient China and Japan. Abandon and apathy in falconry custom was happening everywhere just before the modern period. However, contemporary Altaic Kazakh falconry in western Mongolia gives some idea of sustainable preservation for the future. One of the decisive reasons for the century-lasting falconry custom in this region can be seen in the absence of strict social regulations to join [Soma 2012c, 2012e]. In Altaic Kazakh’s community, anybody can capture and own an eagle and begin hunting without any restrictions. Rather, according to Kazakh masculinity, a participation in eagle-ownership and fox-hunting was a sort of initiation into adulthood. Today, arts and techniques of falconry are widely shared with community members, elders and even falconer’s wives and children. Open knowledge and free participation in falconry customs are a remarkable trait in pastoralist societies, contrary to severe exclusiveness in the sedentary world.

3.5. Conclusions

This paper carried out ethno-archaeological research and analyses of early falconry customs in ancient China and Japan. Even though only nine examples related to falconer figures were analysed in this paper, it was able to touch upon the beginning of ancient East Asian falconry that started in China during the later Han Dynasty (25–220), and then in Japan

during the middle of the Kofun Period (ca. the end of 6th century). This origin might be 600 - 700 years earlier than in Europe.

In comparison to ethnographic facts of classical eagle falconry in Kyrgyz and Altaic Kazakh communities, formative adaptations were inevitable in order to fit sedentary livelihood. Technical reformations were made in terms of: (1) Falconry without horseback, (2) Left-handed style, (3) Selection from small-size birds of prey, (4) Introduction of dogs as beaters and (5) Institutionalisation and exclusivity by higher strata. Therefore, the well-known game or sports falconry style used today has been perfected via deconstruction from the nomadic pastoralists' way of eagle falconry. This could be seen as an effort to incorporate fitness into today's society and environment. Therefore, a wide range of adaptation of falconry culture in sedentary Asia is recognisable, not only as evidence of deep human-raptor interaction for centuries, but also as a cosmopolitan cultural heritage in East Asia.

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Part II

Ethnographic Narrative of Altaic Kazakh Falconry

4. Traditional Art and Knowledge of Eagle-Taming Process

4.1. Introduction

Altaic Kazakh Falconry in Action

This section focuses on current falconry culture still continued in the Altaic Kazakh nomadic society in western Mongolia (Figure 1). Nowadays, falconry is recognized in more than 60 countries [UNESCO 2010a: 3]. "Falconry/ Hawking" culture is not only a most elaborate Human-Animal Interaction, but also an influential practice deeply affiliated with political power, social stratum, symbolism of divine and royalty in human history. The origin of this culture is estimated to date back to more than 2,500 years ago according to archaeological materials [Soma 2012a] [see Part I]. "Falconry/ Hawking", practiced in 11 countries, has been also inscribed on "*The Representative List of the Intangible Cultural Heritage of Humanity*" as a living human heritage in October 2010, which is including eagle falconry of Altaic Kazakhs in western Mongolia [UNESCO 2010a, 2010b]. The practice itself was highly evaluated with the specific criteria about not only subsistence context of falconry, but also any derivative cultural constitutions such as "social practices, rituals and festive events", "knowledge and practices concerning nature and the universe" [UNESCO 2010b].

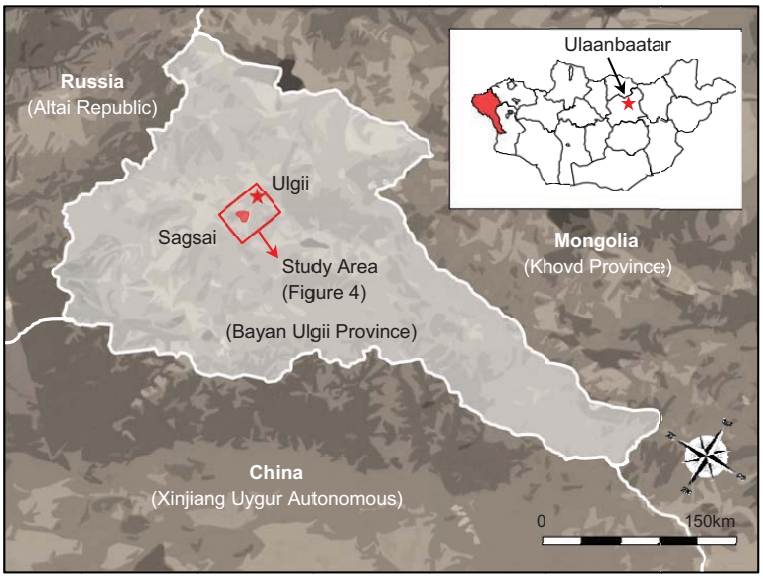


Figure 1. Map of Bayan Ulgii Province and study area

Currently, one of the few groups where falconry culture still exists as part of living tradition, including actual hunting for assuring livelihood, are the Altaic Kazakhs (a minority group) in Bayan Ulgii (Баян-Өлгий/ Bayan Ölgii) Province, Western Mongolia. Their falconry custom is unique in that they only use trained female Golden Eagle (*Aquila chrysaetos daphanea*) (Figure 2: 1 - 4) and practice it on horseback. The custom is still passed on over various generations (Figure 3: 1 - 4). The adult eagle's body size can be up to 66 cm, in height it can reach up to 90 cm and in weight it can reach 5 - 6 kg. An adult female's wing span reaches up to 234 cm in width [Gombobaatar & Usukhjargar 2011: 55]. Their hunting target is also different from ordinary falconry quarries, almost limited to Red Fox (*Vulpes vulpes*) or Corsac Fox (*Vulpes corsac*). Habits and practice of eagle hunting have neither aimed at entertainment like trophy sport-hunting and game-sports, nor at additive subsistence or economic activities such as "food acquisition" or systemized fur trading [Soma 2012b-e]. Nevertheless, Altaic Kazakh falconry with its centuries-long tradition has unbroken ties with actual hunting subsistence. The Altaic Kazakh falconry can be defined as "horse-riding eagle falconry hunting" to underline its uniqueness by differentiating it from other accipitrine (hawk) and falconiform (falcon) tamed falconry.

1. A captive hunting eagle in a fence (at S-22)

2. A captive hunting eagle in a fence (at S-19)

3. A captive hunting eagle (at S-22)

4. A captive hunting eagle in summer pasture

Figure 2. Hunting Golden Eagles

1. One of the eldest eagle master (S-01)

2. A typical settler eagle hunter (S-15)

3. Young eagle hunters at the festival

4. An experienced eagle master (S-06)

Figure 3. Eagle falconers in all generations

It was estimated that there were about 400 eagle masters in the Province in the beginning of the 21st century [Баян-Өлгий Аймаг 2003: 3]. In the context of the classical falconry, the “in situ” purpose of this culture is that of “fox-hunting” for fur-acquisition and “ethnic representation”. The custom has symbolic meanings such as “ethnic identity” and ”historical affiliation” of local Kazakh communities. In this sense, Altaic Kazakhs show deeper attachment to and awareness of Golden Eagle than to other animals such as livestock. Even though Altaic Kazakh’s horse riding falconry is internationally acknowledged in its Outstanding Universal Value (OUV) as one of human cultural properties, its scientific definition and its formation process have yet been inadequately studied. The rapid decline in huntsman population and hunting operations turns out to be unavoidable for this decade. Nowadays, falconry is going to be detached from its classical function of “actual hunting” in its original contexts.

In order to establish an initial academic and scientific basis for further studies and cultural preservation, field research has been carried out from July 2011 to January 2013 under financial support by *The Takanashi Foundation for Arts and Archaeology 2011 and 2012* (founded by Marujin Holdings Company, Limited.). Preliminary results are already published in some reports and journals [Soma 2012a - f, 2013a - d].

This barely known culture was primarily reported to the outside world by travel writings [Bodio 2001, 2003]. Some folk studies were done by the local researcher К. Бикұмар [1994], although the information was not published in a proper way and therefore difficult to access. Two Japanese TV documentary films, "*Daisougen ni Inuwashi ga mau (Soaring of Golden Eagle in the Sky): Mongol-Kazakh-zoku Takajyo no Oyako (Chikyuu ni Koukishin)*" [Japan Broadcasting Corporation (NHK) 2003], "*Boku to Inuwashi no Huyu Monogatari (A Winter Story of Golden Eagle and Me)*" [Japan Broadcasting Corporation (NHK) 2006] are also available as precious documents about a local falconer's livelihood. While their falconry culture was defined as a part of intangible cultural heritage by UNESCO, scientific research and tangible ethnographic narrative about Altaic Kazakh falconry and falconer's livelihood has not been undertaken yet.

Falconry custom is explicitly recognized as an intangible cultural heritage which can be traced back over two thousand years. However, it may be said that the true meaning of this eagle-taming and hunting practice can be seen in the posterior development of a cultural domain that allowed for the coexistence of humans with the Golden Eagle. Therefore, the primary focus of this section is to describe the traditional art and knowledge in each phase of the taming process of the Golden Eagle.

Based on intensive anthropological fieldwork, the chapter presents (1) Brief ethnographies of art, knowledge and tradition of Golden Eagle taming; (2) Theoretical considerations concerning the taming process. The primary focus of this section is to describe the traditional art and knowledge (TAK) in each stage of taming process of a captive Golden Eagle. Even though Altaic Kazakh's horse riding falconry is internationally acknowledged for its OUV as one of human cultural properties, its scientific definition and foundation is inadequately studied yet. However, the decline of huntsman population and hunting activity turns out to be unavoidable for this decade. Nowadays, falconry is going to be detached from its classical function of "actual hunting" from the original contexts. Concrete figures on indigenous falconry and eagle owners will provide more efficient strategy and scientific foundation for the cultural preservation.

4.2. Materials and Methods

4.2.1. Methodology

The research is designed by classical ethnographic cultural research based on concentrated participant observations, interviews, and own experiences in taming a Golden Eagle at Sagsai (Сагсаи) County in the Bayan Ulgii Province in Mongolia. The fieldwork lasted for more than 7 months, extending from 29th July 2011 to 26th January 2012, 30th April to 5th

June 2012, and 1st August to 20th October 2012. I stayed at the family house of a young falconer (S-22) for about 200 days at Buteu Winter Pasture (BWP: R-5 bag) in Sagsai community. Collection of data about traditional ethnographic art and knowledge is based on semi-structured interviews based on actual "face to face" conversation at each household (HH). The research targeted 23 informant falconers (S-01 - S-23) in Sagsai center (n=7) and its vicinity (n=16). Especially, this research basis greatly depends on actual observation and conversation with S-22 (19 yrs-old) and his uncle S-11 (46 yrs-old). Besides, a casual ethnographic conversation, and actual observation through actual daily life provide a great part of information. In this sense, the ethnographic descriptions presented here are highly dependent on the "Sagsai tradition".

Through intensive anthropological fieldwork, this part provides:

(1) Ethnographic documentation of TAK for taming Golden Eagle from empirical participant observation. Personal experience to tame one Golden Eagle in Sagsai also contributes to expand further understanding of manning process.

(2) Analysis of each step of taming and rapport-making processes in comparison with those of the classical British falconry.

The chapter concludes that extensive taming customs based on traditional disciplines of Altaic Kazakh falconers have achieved a distinctive harmony between the master and Golden Eagles for centuries.

All prices are recorded in Mongolian Tugrik (MNT) (1,600 Tugrik＝1 US dollar). All counted numbers (age, persons, birds, head, etc.) refer to June 2012 if not mentioned otherwise. All times are referred to in the local time of western Mongolia (GMT + 7 hours).

4.2.2. Terminology

According to local customs, hawk and falcon kind of birds are not used and tamed for falconry. Altaic Kazakh falconry should semantically correctly be termed "eagling", or simply "hawking" due to the biological classification of eagles as accipitrines. However, the term "falconry" covers the whole range of "raptor taming hunting" within its linguistic register. In addition, Altaic Kazakh falconry is inevitably operated on horseback. Therefore in this thesis, this type of indigenous falconry is occasionally termed "*eagle falconry*" or "*horse-riding falconry*", to stress the distinctive traits which have deep connections with the actual hunting tradition. It intends to differentiate local eagle falconry from preconditioned notion of ordinary falconry linked with "sport hunting" or "entertainment", "aristocratic royalty" that occurred especially in pre-modern Japan and Europe.

Besides, there is no equivalent word for “falconer” or “hawker” in the local vocabulary. The Kazakh name of the “Golden Eagle” is “***Burkut*** (Бүркіт)”, and they name the “falconer”, “eagle hunter”, and “eagle-owner” as “***Burkutchu*** (Бүркітші)” in local Kazakh words, which means “the master of Golden Eagle”, or “eagler”. Therefore below, Altaic Kazakh falconers are addressed as “eagle masters”, or “eagle falconers”.

In English language of falconer’s terms, the “falcon” means “the female long-wing (female falconiform)”. Similarly the “hawk” is a general term suggesting any “bird of prey” or “hunting bird” without specification of sex. Terminologies used across the thesis are to the most possible extent based on biological definitions. Where British falconry terms are used in this chapter, to specify correspondence with technical vocabulary, reference is made to the glossary of old falconer’s guides, “*Gentlemen’s Recreation* (1686)” pp. 4-10 [Cox 1686: 4-10], “*Falconry: Its Claims, History, and Practice* (1859)” pp. 39-46, “*Coursing & Falconry* (1899)” pp. 251-253, and “*Glossary of Falconry Terms*” [Eberly 1968: 58-67].

4.3. Study Area

4.3.1. Bayan Ulgii Province

Traditional animal husbandry dominates the land use systems in Bayan Ulgii Province in the Altai Mountainous Region. This is the westernmost prefecture of Mongolia with a size of 45,705 km^2 (similar to Denmark or Estonia) [Баян-Өлгий Аймаг 2012]. The total population of the Prefecture is $_{approx.}$ 100,800 of which 90% are estimated Altaic Kazakhs. In total, 78,000 of them are engaged in transhumant animal husbandry [National Statistical Office of Mongolia (NSO) 2012].

The Altaic Kazakh community is the latest “diasporic” ethnic minority in Mongolia that developed a social, cultural, and religious identity significantly different from Mongolian people. They also well conserved classical Kazakh language and distinctive intangible cultures are deeply anchored in animal herding, such as “falconry”, “home-made embroidery”, and “horse riding game”, which have vanished in China and Kazakhstan [Diener 2009: 162]. This group is widely perceived as “the poorest” and “most backward” in people in Kazakhstan, but at the same time “the purest and most traditional” Kazakhs [Dubuisson and Genina 2011: 477].

Altaic Kazakhs practice seasonal transhumance which is different from Mongolian herding. Their annual mobility is characterized by the use of different pastureland in summer “***jailau*** (жайлау)” and winter “***kustau*** (қыстау)”. Nevertheless some have seasonal spring and autumn pastures, although three or four point mobility is not common anymore. The “nomadic” or “transhumance” way of life in western Mongolia has been ambiguously discussed as

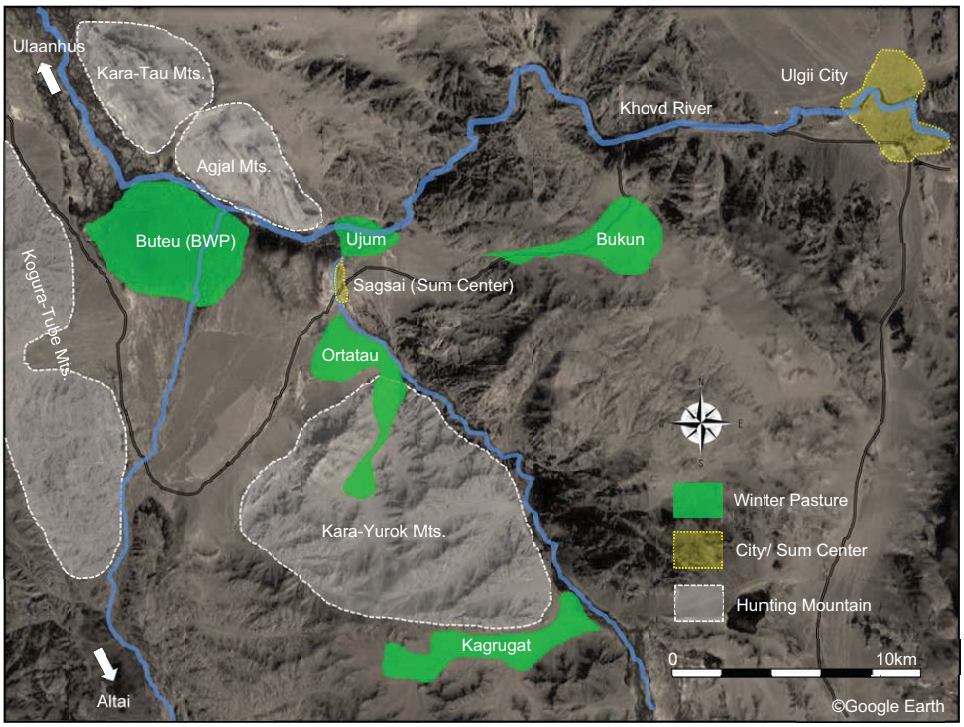


Figure 4. Sagsai and neighboring winter pasture (the Sagsai territory)

livelihood where every phase is governed by natural and environmental conditions. However, the contemporary nomadic way of life is diversified according to the size of livestock possession, living place, and social position. Few studies have been done before about Altaic Kazakh's livelihood itself. In connection to scarcity of previous works, literature sources, and anthropological social research, basic knowledge about eagle falconry has not yet been clarified to a great part.

4.3.2. Buteu Winter Pasture, Sagsai County

The main study field of Sagsai County is situated in the center of Bayan Ulgii where the largest territory in the prefecture is found. The center of Sagsai County (the Sum center) is about 35 km west from Ulgii city. The total population of the county is about 4,000. Approximately half of them (including school children from detached pasturelands) settled in the Sum center. Except settlers, most of them are engaged in seasonal transhumance and animal herding in pastureland. Due to relatively good accessibility from the prefecture center, there are quite a few incoming and outgoing people and travelers. There are 13 small general stores, three cloth shops, two branches of banks (Хаан банк/ Төрийн банк). There is a main campus of the local school with a dormitory where about 500 children aged 6 - 18 years-old

live. A kindergarten is also situated near the school, but is not full time opened. In addition, one hospital and one veterinary office are located at the center. There is no market place for sale of perishable foodstuff. Vegetable or meat are mostly self-produced or obtained from Ulgii city. Half of the herder households who stay at neighboring pastureland cultivate their own potato field in the southern part of the sum center. The main livestock species is goat, the population of which is much bigger than that of sheep.

Winter pasturelands surrounding the sum center are traditionally recognized by place and territory as *Buteu*, *Ujum*, *Ortatau*, *Kaglgat*, and *Bukun* (Figure 4). Their territory was established not by today's local administration or Mongolian government, but by local Kazakh ancestors who migrated to this place about 150 years ago. This local institution is no particular phenomenon in Sagsai village. The local administrations after the democratization of Mongolia, often took over conventional recognition of pastureland territory in their local governance. In this thesis, the term "the Sagsai territory" refers to the special territory including the Sum center and these neighboring pasturelands.

Buteu Winter Pasture (BWP: R-5 bag) is situated just next to the center of Sagsai County (Figure 5 - 6). The BWP territory is 7.5 km in east-west dimension and 3.5 km in north-south dimension; the gross area approximates 26.2 km^2. BWP is situated in the middle of marshy area created by track-shifting of the Khovd River and its tributary streams. Consequently, the territory is abundant in pasture and water supply from every spring to autumn compared to neighboring pasturelands in the Sum. Ridges and mountains surrounding the north and west of BWP were used as hunting territory for a long time. In BWP, there are 45 herder households settling during winter time; this seems to be the highest density of settlers compared to the other summer and winter pasture all over Sagsai County. BWP is relatively easily accessible from Ulgii city which can be reached in an hour by car. There are two families who operate daily taxi driving between Ulgii and BWP. In total, taxi drivers in the Sum are estimated at more than 10 families. It is possible to find 4 - 5 cars to Ulgii every day. For that reason, local people frequently travel between Ulgii and Sagsai for work, shopping, visit, ceremony, and so on in all seasons.

Figure 5. Buteu Winter Pasture of the study area in Mongolia (summer)

Figure 6. Buteu Winter Pasture in the study area of Mongolia (winter)

The local sales price of each livestock species is listed below: Goat: 50,000 - 70,000 MNT/ Sheep: 100,000 - 150,000 MNT/ Cow: 500,000 MNT/ Horse: 600,000 - 700,000 MNT/ Camel: 1000,000 MNT (based on interviews at Sagsai as of 1st September 2011). In that year, the price of livestock was sharply rising, by 15 - 20% compared to one year before. One reason is the massive fatalities of livestock in 2009/ 2010 due to winter storm ("***dzud*** (зуд)"). Livestock trading and dealing is not institutionalized and is a usual feature of daily livelihood in Sagsai. However, its quantity is limited and the buyer and seller relation seems to be also fixed in many cases. Some local herders and settlers tend to buy sheep or goats for particular purposes such as a wedding ceremony, cerebration, or other urgent necessities. Almost all of its own meat consumption is produced by the household. For example, an average household needs 15 - 20 sheep/goats for annual consumption. Traditionally one horse or cattle are slaughtered in every November, as a winter stock of meat, even though most poor households cannot follow this custom. Possession of several camels is only confirmed for two households at the Sum center and surrounding pastureland.

4.3.3. Sagsai Eagle Falconers in Present Times

In the beginning of 21st century, about 400 eagle owners were estimated to live in the Bayan Ölgii Prefecture [Баян-Өлгий Аймаг 2003: 3]. However, according to my inquiries in 2013, the population of eagle falconers sums up to not more than 150. The total informant eagle masters (n=47) are shown in Table 1. Contemporary eagle owners are divided into two groups depending on their lifestyle; one is "settler" and the other is "animal-herder". Most of them are animal herders.

In the study area chosen for concentrated fieldwork there were 23 eagle falconers (20 HHs) living in the Sum center and neighboring pastures, 7 settlers (6 HHs), and 16 animal-herders (14 HHs) as of September 2012. There were 24 captive eagles tamed by these falconers, mostly pre-adult eagles, commonly 2 - 5 years old. The age of the eagle masters varied from 16 years to 90 years old, spreading over several generations. Sagsai is also famous for its numerous skilled eagle falconers in other regions of Mongolia. When the first Kazakh cultural event "The Golden Eagle Festival" was held in Ulaanbaatar in February 2008, 21 masters were summoned for demonstration of taste of eagle falconry and were awarded for their skills and knowledge by the Prime Minister (N. Enkhbayar at that time) [detailed in Part III] - nine of these were from Sagsai County.

This abundance of experienced and skilled falconers across generations presented an ideal case for concentrated observation of falconry practices in this research project, and also allowed to study recent developments such as, among others, in the status of eagle masters, the succession of generations, and the alteration of traditions.

Table 1. Interviewed Informant falconers in Bayan Ulgii (as of September 2011)

No.	Region	Falconer	Age	Living Status	Tutor	Hunting (day)	Numbers of Eagles	Eagle's Age	Past Posession
1	Altai	A-01	75	transhumance	father	retired	—	—	unknown
2		A-02	56	transhumance	father	non	1	3	6
3		A-03	51	transhumance	ownself	non	1	5	7
4		A-04	50	transhumance	father	non	1	5	5
5		A-05	45	transhumance	father	non	1	12	6
6		A-06	39	transhumance	father	non	1	2	6
7		A-07	30	transhumance	father	non	1	unknown	2?
8		A-08	30	transhumance	father	non	2	3/1	3
9	Bogot	B-01	53	transhumance	father	1~5	1	2	3
10	Sagsai	S-01	95	transhumance	father	retired	—	—	unknown
11		S-02	74	transhumance	father	retired	1	4	unknown
12		S-03	71	transhumance	father	retired	1	4	9
13		S-04	66	transhumance	father	retired	1	unknown	unknown
14		S-05	65	transhumance	father	retired	1	6	5
15		S-06	61	sedentary	father	retired	2	13/1	5
16		S-07	55	sedentary	father	1~5	1	5	4
17		S-08	54	transhumance	father	non	1	5	3
18		S-09	51	sedentary	father	non	1	2	11
19		S-10	51	sedentary	ownself	trap/ gun	1	6	5
20		S-11	47	transhumance	ownself	5~10	1	1	5
21		S-12	46	transhumance	father	non	1	3	11
22		S-13	44	transhumance	father	non	1	4	3
23		S-14	40	transhumance	father	non	1	6	2
24		S-15	36	sedentary	father	trap/ gun	1	5	1
25		S-16	34	transhumance	father	1~5	1	4	3
26		S-17	32	transhumance	ownself	non	1	7	1
27		S-18	28	transhumance	father	non	1	6	3
28		S-19	27	transhumance	father	non	1	6	2
29		S-20	25	sedentary	father	non	1	4	2
30		S-21	22	transhumance	ownself	non	1	7	1
31		S-22	20	transhumance	ownself	5~10	2	7	1
32		S-23	17	sedentary	father	non	1	4	1
33	Tolbo	T-01	90	transhumance	ownself	retired	2	20/2	5
34		T-02	70	transhumance	father	10~20	1	5	10
35		T-03	65	transhumance	ownself	10~20	1	5	13
36		T-04	58	transhumance	father	10~20	1	2	5
37		T-05	54	transhumance	ownself	10~20	1	3	6
38		T-06	49	transhumance	father	10~20	1	2	4
39		T-07	46	transhumance	father	10~20	1	2	1
40		T-08	45	transhumance	father	10~20	2	5	3
41	Ulaanhus	U-01	80	transhumance	father	retired	—	—	unknown
42		U-02	71	transhumance	father	retired	1	unknown	unknown
43		U-03	63	transhumance	ownself	non	—	—	10~
44		U-04	56	transhumance	ownself	non	3	6/6/1	40~
45		U-05	52	transhumance	father	non	1	4	6
46		U-06	46	transhumance	father	non	1	6	3
47		U-07	35	transhumance	ownself	non	1	1	3

4.4. Result I:

Ethno-Ornithology - the Indigenous Recognition of Golden Eagle

4.4.1. The Golden Eagle of the Altai Mountains

Golden Eagles are to be found world-wide; nevertheless some sub-species are in danger of extinction in several habitats/regions. Breeding efficiency of Golden Eagles in the Kitakami Mountains of Japan has been less than 20% [Sekiyama 2007: 22-25] and remarkably, a couple would not have laid an egg for more than 30 years. Fasce et al. [2011: 585-586] checked 2,775 pairs of Golden Eagle in northern Italy and overall, 72.4% of them laid eggs

over the 37 years of monitoring (1972 - 2008). Fifteen percent of successful nests produced two fledglings on average. Across the British Isles, 700 - 900 eagles, an estimated 250 - 350 adult pairs were reported in the 1980s, the majority of which dwelt in the Scottish Highlands [Ford 1982: 112]. The population stabilized during the 1990s to recover to approximately 439 - 443 pairs between 1992 and 2003 [Whitfield et al. 2010]. In Japan, there are only 650 eagles in total (as of 2004) [Ministry of the Environment 2004]. Even in a largest portion of the European Alps, there were an estimated 2,000 eagles (circa 1,100 couples) in 2000 [Brendel et al. 2002]. However in general, the Altai Mountains are assumed to be the world's largest Golden Eagle habitat, especially in the Bayan Ulgii Province. The birds are considered to be resident breeders which normally stay all year round in all parts of Mongolia (it is the "least concerned" species in the local avifauna) [Gombobaatar & Usukhjargal 2011: 55]. The Golden Eagle is named "Бүркіт (*Burkut*)" by local Altaic Kazakhs, and known as "Цармн Бүргэд (*Tsarmun Burged*)" in Mongolia. Altaic Golden Eagles (*Aquila chrysaetos daphanea*) are believed to be bigger than subspecies in the European Alps, Scotland or Japan. They are living in almost all parts of Mongolia except for some regions in the Gobi Desert, and their main nesting place is the wider range of the Altai Mountains [Gombobaatar & Usukhjargal 2011]. Falconiforms in Mongolia have been extensively researched and documented from the 1990s onwards [Potapov et al. 1999; Shagdarsuren 2000]. In comparison, Golden Eagle has not been subjected to a serious count and biological research yet, since it is assumed that the population of Golden Eagle is abundant enough still and not facing serious degradation of their natural status. In my personal view, the population of Golden Eagle in whole range across the Altai region (Bayan Ulgii, Khovd, and Gobi Altai Province) is at least 1,000 birds.

The reason for such a comparatively high eagle density is ascribed to extreme and severe natural conditions, and the specific geomorphology of the environment. Due to the harsh living conditions, human population in the region has been limited since the ancient times. The human density of Bayan Ulgii Province is less than 2.0 persons / km², particularly in remote places, which benefits the propagation of Golden Eagles. Consequently, the mortality rate caused by human interference has been considered to be very low in these regions. The environment in the Prefecture has been undoubtedly free from contaminations by DDT/DDE and any other agricultural chemicals or pesticides, which, for instance, is the first cause of mortality of booted raptors in North America and Europe. The mortality ratio caused by electrocution is also estimated to be very low in this region.

The Golden Eagle has the broadest variety in its daily diet compared to falcons and hawks. The dietary spectrum is flexible depending on the environmental conditions and prey availability; the eagles hunt small mammals like rat, rabbit, hare, and medium size mammals like fox, corsac fox, as well as wild birds such as duck, grouse, pheasant (*Tetraogallus sp.*). Actually observed feed and prey is documented in Figure 7. The eagle's major feed is considered to be rodents such as susliks (*Citellus sp.*) and gerbils (*Rhombomybs sp.*), at least in eastern Kazakhstan [Sánchez-Zapata et al. 2003: 71-77]. The main prey animal of a local

Golden Eagle couple in Bulgaria (at Sarnena /Sredna Gora) was tortoise (*T. hermanni*, *T. graeca*, *Testudo sp*.) with 55.4% of total consumption, then hedgehogs (*Erinaceus roumanicus*) with 13.8% as secondary prey [Georgiev 2009]. Furthermore, 7.7% of consumption was derived from unfortunate house cats (*Felis silvestris catus*). Occasionally coyote (*Canis latrans*) are reported as prey in North America [Ford & Alcorn 1964; Mason 2000]. Skilled hunting eagles can hunt also large mammals such as elk, gazelle, deer, Argali (*Ovis amon*), Eurasian Beaver (*Castor fiber*), Siberian Ibex (*Capra sibirica*), and even juvenile cattle. In addition, skilled eagles are believed to hunt wolfs by Kyrgyz and Kazakh falconers. The Golden Eagle does not really show preference for river fish, but there is a report of rainbow trout hunting at a shallow point of the Colorado River in winter, as well as of scavenging of dead fish [Brown 1992: 36-37].

From personal observation of Altaic Golden Eagles in comparison with Kyrgyz ones, eagles tamed by local falconers are bigger than those owned by Kyrgyz falconers. They show frequent aggressive behavior against strangers with ruffling up their feathers. They hurled on the back of humans several times during fieldwork, probably due their docile nature or personal temper. In contrast, they become calm once tamed and well keep still when the hood is put on or when they are perched on the arm of their master. This may suggest flexibility of obedience to the master and aggression towards strangers. Most of tamed Golden Eagles

Figure 7. The captive eagle's diets for daily feeding in Mongolia.

have not got screeching habit, mostly unnecessary to redress it. There are 24 captive eagles confirmed by my general survey, and only 4 eagles (possessed by S-03, S-06, S-11, S-13) have a frequent screeching temper. S-11 and S-13 tried to reclaim their habit with a physical restraint on the beak nevertheless incurable. This may suggest that screeching temper needs to be addressed from early stages of the bird's growth.

4.4.2. Capture of Eaglets: Cases in Sagsai County

Altaic Kazakh falconers only choose to tame female Golden Eagles. Selection of female hunting birds was also an observed tendency in archaeological material documenting the early stages of falconry in Germany during the 8th - 11th century [Prummel 1997]. Female raptors were also valuated higher than male ones in medieval British falconry. Local Kazakh falconers believe that the female eagle's hunting ability is better than that of the male individual. Not only the larger body size of the female, but also her grasping power and initial flight are stronger than the male's. She is believed to be more insistent on chasing and seeking the prey. The reason for these features is considered to be her strong motherhood instinct for breeding her offspring.

Traditionally, local falconers used to capture their eaglet directly from an aerie before the animal's flying ability was fully developed. Some also said that falconers prefer an eaglet which has a stable growth and physical stability without flying ability (estimated 7 - 9 weeks old). In the vicinity of Sagsai, eagle aeries are occasionally seen and it is possible to find them in the rocky cliffs even closely behind the herders' winter houses. Eaglets are captured in the mid of June. The most preferred eaglets are 5 - 7 weeks old juveniles ("***eyas/ nestling***") before "***fledging***" (= eaglets leave the nest). Falconers also believe in the tendency of young eaglets to "***come to***" (= to begin to subordinate) the master which promises much "***gentler taming***" (= "to man" in falconer's term) than with captured young birds ("***haggard***"). Most often the biggest eaglet or the female one is chosen if several eaglets in the nest. Eaglets grow to almost the size of an adult and acquire flight ability at 10 weeks after hatching. They normally will leave their nest after 12 weeks [Parry-Jones 2000: 14-15]. According to local falconers Altaic Golden Eagles usually lay two eggs every March, hatch in May, and afterward are fledging around every 20th of July. Therefore, falconers actually try to capture eaglets mostly in the middle of June. They start to look for eagles' nests in advance in the mountains on horseback in April and May. During actual observation, S-11 captured a much younger eaglet (about 10 days old) and tamed it until adult without problems.

A short survey on nest distribution of Golden Eagles was carried out in company with local falconer S-16 (on 18th August 2011). Two eagle nests (N01 and N02) were detected in Sagsai territory. Eagle's nests are relatively easy to find, since there are very clearly indicated by eagles' white droppings ("***mute***" or especially "***slice***" by short-wings) underneath the nest. This

sign is brightly leaping out on the dark colored rocks in this region. Therefore, local falconers try to find this white sign on the cliffs and rocks in the nest survey.

(1) N01 was situated on the top of high cliff where herders can hardly reach. Falconers could however access the nest from the top of the hill. There were no eagles and eaglets in the nest – it had been abandoned.

(2) N02 was situated on a rock just 350 m behind a herder's (S-12) winter house (Figure 8: 1 - 2). There were no eagles and eaglets in the nest. N02 was also situated on the top of the rock ledge which was about 3.5 - 3.8 m high. The location of N02 was easily accessible on foot. Droppings around nest seemed to be relatively fresh. And S-16 discovered an eagle soaring high in the sky over the nest. Although there were no eaglets since the breeding season was already over, the nest had probably not been abandoned yet. The size of the nest was 40 – 50 cm in height and 110 – 120 cm in width. It offered enough space even for an adult human sitting on. Not only diet animals' bones, but also a leather belt, a leather bag and a wire for cloth hanging were found inside the nest. Small branches of poplar and Caragana were the dominant materials for nest construction. Even small branches scattered around in the pastureland are a precious material for nest construction by eagles. Therefore, sustainability of timber resources is of considerable importance for the propagation of Golden Eagles.

Another nest survey was carried out in company with S-22 and Mr. KY (uncle of S-22) at the north bank of Kaindaral Winter Pasture (on 8th and 9th June 2012). Mr. KY sought an eaglet for participation in hunting and the ethnic festival in 2012. During the survey, 4 eagle nests (N3, N04, N05, and N06) were detected in the place nearby Mr. KY's winter house. N03, N04, and N05 were built on the cliff in the same territory, only 50 m space between each other (Figure 8: 3 - 4). Especially N04 and N05 (Figure 8: 5) were set out just next to each other. This indicates that these nest belonged to the same couple due to rebuilding in the same place. In N03, a small mammal's skull was found. This suggests reuse of the nest by small birds after having been abandoned by the breeding birds. There were neither eaglets nor eggs inside all nests and it was not possible to confirm the presence of parent birds. Another nest, N06 (Figure 8: 6), was also detected although it was situated on a highly detached cliff impossible to access. Overall, Golden Eagle's nests were built at places close to the human living sphere, indicating that indigenous eagles are not afraid too much of herders presence.

Nesting flexibility of Golden Eagles in general seems to be relatively high. At the Cape Krusenstern National Monument (U.S. National Park Service, Alaska), caribou antlers were used as nesting material, summing up to 10 - 15% of total weight of the nest [The Raptor Research Foundation Inc. 1998: 268]. There are four gregarious points potentially to collect branches around the Sagsai territory (see Figure 4); Point I: Caragan trees in the south of the Sum center; Point II: Caragan trees in the south of Buteu Winter Pasture (BWP); Point III:

1. N02 (from upper side) with S-16

2. N02 (from lower side)

3. N03 (from nearby)

4. N03 (from lower side) and S-22

5. N04 (above) and N05 (blow)

6. N06 on the inaccessible cliff

Figure 8. Eagle's nests around the Sagsai territory in Western Mongolia

Figure 9. A “white shoulder eagle” (owned by T-03) in Western Mongolia.

Figure 10. T-05 and T-03 with his bird in Western Mongolia.

Poplar tree reserves at the west opposite side of the Sum center; and Point VI: Poplar tree reserves at the north of BWP. Point I and Point II are used for autumn and spring pasture by local herders. There are potato fields and three households settle at Point I in autumn. There are 12 HHs settled at Point II in winter. Point III and Point VI are almost isolated islands created by small rivers, and as a result not much human presence can be expected all year round.

According to a story from old times (collected from S-03), the eagle capture process conventionally requires elaborate technical skills. Falconers need to visit the nest before dawn in any case. Wild eagles normally have a weak night vision. Therefore, one catcher descends underneath of the cliff by binding himself on the net stretcher device. When reaching to the nest nearby, the eagle-catcher suddenly lights his torch and dazzles the eagles’ eyes to expel the parent birds. While the adults are flying away, the catcher takes one eaglet from the nest. This simple way avoids insistent defense or resistance from the parent birds.

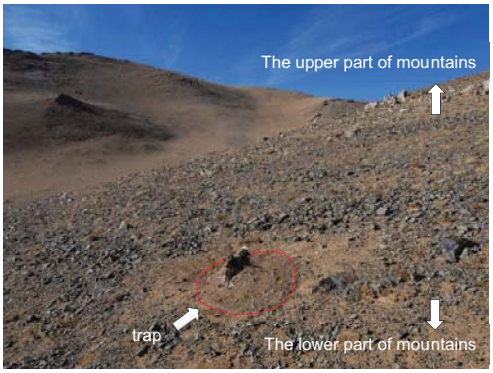
4.4.3. Trapping of Juvenile or Adult Eagles: A Case in Tolbo County

Some young eagles (or passage eagles) are also captured with a net for sale and trade. One typical way of trapping by a local falconer was observed at Tolbo County. The master T-08 usually caught 1 - 2 eagles per year with his trap in recent years. Eagle masters in Tolbo territory do not have a customary tradition to get an eagle from the nest. According to the recall from T-01 (one of the oldest falconers interviewed), when he was young, falconers trapped eagles every September or October. T-03 bought a good adult bird from Deluun County called “***Ak Ikh*** (Ақиығы)” (= “White Shoulder”) (Figure 9 - 10). Such an eagle normally has purely white inner feathers on her neck and is the strongest and most prestigious bird in falconers’ recognition. Kyrgyz falconers also classify this type of eagle as “*Alatoo-non Ak-een*” (= “White Shoulder of Snow Peaks”). The bird may be the Eastern Imperial Eagle (*Aquila heliaca*) also

dwelling in the Altai and Central Eurasia; the Japanese indigenous name also calls *Aquila heliaca* the "*Katashirowashi*" (="White Shoulder Eagle"). According to Tolbo falconers, Deluun County hosted good eagles, and some of them were regularly sold to Tolbo.

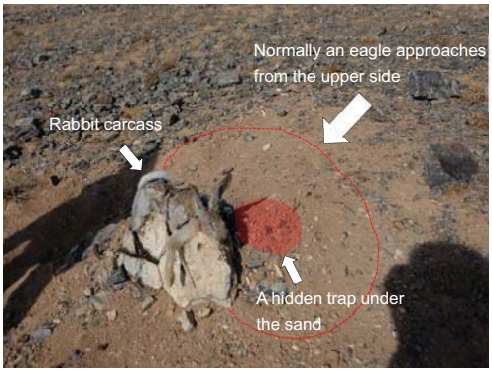
T-08 used one of the simplest and most common ways for trapping [recorded during a visit on 11th October 2012]. An ordinary iron trap was set on the southern surface of the hill. The trapping place was selected based on some criteria such as nice visibility, opening to the sky (Figure 11: 1) and few rocks or stones nearby. A whole body of rabbit or a lump of meat was put in the front of the trap at the down part of the rock, showing off to the sky (Figure 11: 2 - 3). The trap was hidden underneath with sand and flattened on its surface. If an eagle tries to eat the rabbit meat; the hidden trap will bind her leg. The Golden Eagle captured at the day of visit was a female about 5 - 7 years old (Figure 11: 4). However, she was released soon because of loss of one of her talons in nature. He had also trapped a male some weeks before and released it.

In previous times, trapping with a net was also common. After a juvenile or adult eagle finished a great amount of meat at the field or trap point, eagle-catchers chased her on



1. Trapping place at mountain

2. T-08 and his trap



3. A Structure of trap

4. A tapped 5-7 year-old female eagle

Figure 11. A common trap for adult eagles at Tolbo County in Western Mongolia.

horseback with a rope or net. The bird was relatively easy to catch because it could not fly high due to its heavier weight after the meal. Some falconers also preferred to capture a juvenile or adult bird when it rained, because the wet wings do not allow the bird to fly high.

If the falconer successfully captures a bird and brings her back home, the falconer's wife or household members throw some candies, cookies, or sweet stuff towards the catcher to express congratulations (called "***cheshu*** (чәщ)").

4.4.4. Trapping of Juvenile or Adult Falcon or Hawk: A Case in the Issyk-Kul Province

As additional information, the net trapping of migrating falcon and hawk ("*Passage Hawk*") captured by Kyrgyz falconers may expand the knowledge about the stages of initial contact with raptors in the taming process. Own survey work confirms the practices of four falconers at Kashat Village in Lake Issyk-Kul Province. Unlike Altaic Kazakhs, there are specialized "*raptor catchers*" called "***sayatchi*** (саятчи)" in local Kyrgyz terms. In old days, the raptor catcher was engaged in bird traffics, such as exchange, gift, and trade of falcons, hawks, and eagles. Once, Kyrgyz eagle falconers also asked for good eagles as own taming birds. Some of them were surely transported to Arab countries. Juvenile and adult birds are trapped in autumn (from September to November) in the northern Issyk-Kul region and in spring (from March to April) in the southern Issyk-Kul region. This seems to correspond to the seasonal migration of raptors which vertically traverse the Lake. In the end of winter, captured birds are released every year; they are not used several years.

According to the four falconers (all of them are also *sayatchi*) the nests of Golden Eagles are detected relatively easy. By observation, the initial flight of Golden Eagle after hunting or feeding on trap feed becomes slow and less lively with a low-flying tendency due to heavy weight. This is because they keep the flesh in their stomach until maximum capacity and later feed it to chicks. In addition, they tend to fly back to the nest in straight decent or directly over it. If the raptor catchers could in this way find the nest, they captured an eaglet in the same way as the Altaic Kazakhs.

The net trapping is also a common way to capture juvenile and adult raptors. All falconers in Kashat Village captured their own eagle or hawk by themselves. This ethnographic record relies on a survey of capture at Kungei Alatoo Mountains by local falconer [recorded on 28th October 2006]. The trapping terrace was situated at about 2,000 m altitude in the middle of the southern surface of the mountains 3.6 km north from the village. To reach there it took nearly 2 hours climbing walk from the foothill. Conditions of net-trapping were similar between Altai Kazakh and Kyrgyz. There was an open terrace to the sky on the ridgeline that provided a nice view of decoy food for the raptors. Four falconers had their own trapping places and a small hiding shelter aside.

Figure 12. Trap-building by a Kyrgyz falconer in Western Mongolia.

The falconer did not bring many trapping devices, just: 1. two sets of nets; 2. a pigeon as a decoy bird, and 3. a small amount of wheat grains (Figure 12: 1). The trapping net was set up as follows:

(1) On the way the catcher picked up a couple of long branches for a pillar of the trapping net.

1. A captured young goshawk

2. A captured goshawk in a carrying porch

Figure 13. A trapped young Goshawk in Western Mongolia.

(2) At the trapping place, the catcher stabbed the branches in a trapezoid shape, of which the long side faced the valley. The long and short sides were 4 m and 2 m long. A net was hung around at 150 cm height, only leaving open the mountain side (Figure 12: 2 - 4).

(3) A similar trapezoid net was set up at the outer side of the net with a distance of 50 – 60 cm, at half the height of the inner net. The outer net will cling to the bird's body when it tries to escape from the inner net. Practically speaking, the trapping net needs to be pulled looser with 10 – 20 cm extra on the ground, not strained tightly (Figure 12: 5 - 7).

(4) Short branches were set in line on the extra part of the net in order to let it cling insistently on the bird's body (Figure 12: 8).

(5) The catcher put a Y-shaped pillar in the middle of the net (Figure 12: 9 - 10).

(6) A decoy pigeon was fixed in the center, fastening the body with a rope. The rope was led through the top of the Y-shaped pillar to the hidden shelter situated 7 – 8 m behind the trap. When the catcher saw some raptors in the sky, he pulled the rope to make the decoy pigeon rustling. Around the pigeon, some wheat grains were scattered (Figure 12: 11 - 12).

(7) Then the catcher was calmly waiting in the hiding shelter until birds were flying overhead (Figure 12: 13).

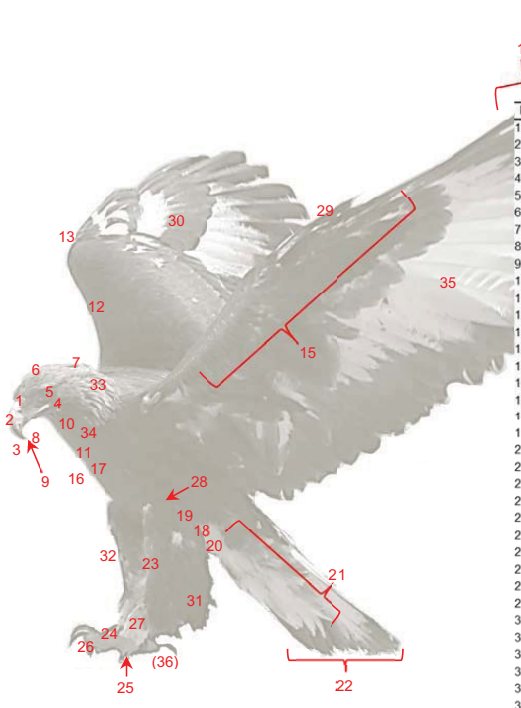
During this participant observation, the catcher could capture one juvenile Goshawk 2.5 hours after setting up the trapping net. Beforehand, when the catcher remarked soaring of a passage bird overhead, he pulled the rope to make the decoy pigeon flutter. No sooner than the hawk detected the presence of the decoy pigeon, she "***stooped***" (= swoop on) toward the lure decoy straight forward without perception of the surrounding net, and was netted. The catcher ran toward the captured hawk, and then expeditiously removed the net cling. The

captured Goshawk was put in a small porch with a head hole (Figure 13: 1 - 2). In this autumn season, they often captured 2 - 3 hawks or falcons in a few days. All catchers suggested that juvenile birds are rather easier to capture than adult birds, because they are less experienced and rather unable to detect a trapping net.

The method is one of the simplest ways of trapping and a classical manner of raptor catching, probably not greatly altered for centuries in Kyrgyz and around. It seems to be especially effective for small raptors. Nevertheless this method of net trapping has not been observed in Altaic Kazakhs, it is probably a local manner of capture for juvenile or young falcons or hawks. Almost an identical trapping manner was common across the Arab world in the 12th century and even in contemporary Iran [Clark 2004: 52]. Haggard birds were captured by trapping in the period of migratory passage from October to November in Europe [Hamilton 1860: 267-268].

4.4.5. Indigenous Expressions for Golden Eagle's Age, Sex, and Body

Local eagle masters have an indigenous name for each part of Golden Eagle (Figure 14). These expressions are, however, not frequently used any more. However, this points to a



No.	Faloner's Term	Biological Term
1	Көк болат	Cere
2	Құсмұрын	Nare (Nostrils)
3	Ақ тұмсық	Beak
4	Шегір көз	Eye
5	Қабақ	Eyelid / Supraorbital ridge
6	Төбе	Parietal / Vertex
7	Шүйде	Back of Head (rape)
8	Кемшегі	Lower Bill
9	Қияғы	Tongue (lower till gonys?)
10	Жемсау (бөтеге)	Goiter
11	Омырау	Breast
12	Көрмеиық	Brachium/ Biceps?
13	Жебэ	Third Digit
14	Құйрықтар	Primary Remiges
15	Сан	Covert Feather
16	Шеңгел	Sternum
17	Жембасар	Crop
18	Сығым	Vent
19	Төгерін	Synsacrum
20	Табан	Down or coverts under tail
21	Сырт (бүкіл сырт жағы)	white part of contour feather
22	Шалғайы	Tail Wings?
23	Топшы	Thigh
24	Шалғы	Tarsus?
25	Серпер	Sole of Foot
26	Анғар	Crotch
27	Шонғы	Tarsus/ Leg (Arm)?
28	Бауыр	Liver
29	Сақырауқұлақ	Alula
30	Май-үбіт	Patagium/ Wing
31	Көбе құйрық	Leg Feather
32	Қауырсындар	mantle?
33	Балақ жүн	Feather of Occiput
34	Тұрқы (Ұзын)	Inner Wing Covrt
35	Жотасы	Outer Wing Covert
36	Мелкем (Жұдырық)	Fist

Figure 14. Indigenous falconer's terms for each body part in Western Mongolia.

deep awareness and elaborate cognitive system about local eagles. This is comparable to similar expressions in Old British and Japanese falconry.

An eaglet directly captured from the aerie is called "***kolbala*** (қолбала)". A juvenile or young bird trapped by net or exchanged (including gifted) is called "***juz*** (жұз)" in local terms (correspond to *haggard*). Kolbala is recognized as stronger than *juz* in local belief and only possible to grow up to wolf-hunter eagle "***kuran*** (қыран)"). Female eagles are called "***elek*** (елек)". According to the survey, Kolbala eaglet was only confirmed in three cases in May and June 2012. Most eagles were trapped or exchanged among herder or falconers currently.

The male bird is only called "***sarcha*** (сарыща)" which means "yellowish" which has a negative connotation, namely "immature". Eagle masters admire the female Golden Eagle because of her strength and hunting potentials. The male one is believed physically weak and less motivated for hunting, and eventually becoming a subject of joke. Consequently, the male bird is never used for taming or hunting. Local falconers generally do not give a given-name to their eagle. They call their own eagle by molting names. The female Golden Eagle has 10 names according to her age (number of moltings; Table 2). Other variations are also mentioned by Бикумар [1994: 104-105] and some other locals. This means that the relationship between the master and the Golden Eagle differs in each year, according to age and acquisition/taming manner. For example "***Barapan*** (Балапан)" is not only used for eagles, but for every species of birds, occasionally for childhood name. Besides, "***Telnek*** (Телнек)" does not mean two year-old bird in biological term, but 2nd year bird from fledging (the 1st molted bird).

Table 2. Eagle's molting names in Altaic Kazakhs and Kyrgyz (Western Mongolia).

Local Cognitive Age	Actual Age	T. Soma*	K. Bikhmar		Sagnbai (Kyrgyz Case)
1	0	Barapan	Balapan	Balapan	Barapan
2	1	Ternek	Ternek	Kan-Tubut	Bozum
3	2	Tash-Turyuk	Tas-Tubut	Ternek	Um-Turyuk
4	3	Kum-Turyuk	Ana	Tas-Turuk	Tash-Turyuk
5	4	Ana	Kana	Muzbalak	Kom-Turyuk
6	5	Kana	Jana	Kok-Tubut	Bartin
7	6	Sana	Kum-Tubut	Kana	Bir Bartin
8	7	Yuu-Turyuk	Sum-Tubut	Jana	Eki Bartin
9	8	Suu-Turyuk	Konur-Tubut	Mai-Tubut	Uti Bartin
10	9	Artin	Karu-Tubut	Barkun	(Number+)
11	10	Bartin	Akturuk	Barchin	
12	11		Akurgul?	Shegel	
13	12				

* According to names at the Dayan Region

4.5. Result II:

Rapport-Making between the Master and the Golden Eagle

4.5.1. Golden Eagle becoming hunting bird at the Human Sphere (in summer case)

The taming process of an eaglet usually takes at least 30 - 45 days even if carried out by a skilled master. On the other hand, according to Kyrgyz falconers, so called long-wings (falcon) and short-wings (hawk) only need 7 - 10 days to complete taming for actual hunting. Golden Eagle takes plenty of time in manning to cooperate with the master. One of the important things is to perch an eaglet on the arm and feed it personally every day. In the local tradition, 5 year-old eagles are released to nature again at the end of the winter season. Golden Eagles will reach sexual maturity when they are 4 - 5 year-old. During the same period, they become physically strongest in hunting action. The reason why the strongest matured eagles are intentionally released into nature is for the sake of spiritual guardianship based on “the Capture and Release Custom”, the conventional regulation. Old falconers desired them to find a partner in the mountains and breed eaglets for the new generation. Therefore, female eagles of 4 or 5 years are called “***Ana*** (ана)” which means “mother” in Kazakh falconers’ terms. After release of their eagles, falconers embark to find new eaglets in the mountain.

One folk story collected from a Kyrgyz falconer also suggests close human and raptor bonds: “*One falconer found an eagle in the mountain that he used to tame and hunt with it. After the eagle’s release, when the falconer unintentionally swung his fox-fur training lure*

1. More than 20 years tamed eagle by T-01

2. One of eldest falconer in Bayan Ulgii (T-01)

Figure 15. A long-term tamed eagle and T-01 in Western Mongolia.

once, as he had done before, the Golden Eagle well remembered him and flew down back to the lure again". Kyrgyz falconers also believed in old times that the death of Golden Eagle died at the human sphere suggests abdominal omen and anathematic. One of the oldest masters, T-01 in Tolbo, lived with one outstanding eagle for 19 years. Even though he had tried to return her to the mountain several times, the eagle flew back to his place every time (Figure 15: 1 - 2).

However, today 5 year-old eagles are not released any more, rather the masters wait until they are ≥8 years because of hunting activities have declined nowadays and reduce the physical burden of captive eagles. Two eagle owners (S-06 and S-11) kept 11 - 12 year-old eagles. S-11's bird was only engaged in hunting operation until February 2012. In today's reality, the capture and release custom is not practiced any more by local falconers and eagle owners. Some birds are kept forever and sold to others. This entails some significant controversies against the old convention which seems to be a serious threat to the eagles as natural resources (detailed in Part III).

Tamed eagles are seen everywhere in the center of Sagsai. Most falconers perch their

1. An eagle at S-07

2. An eagle at S-09

3. An eagle at S-06

4. An eagle at S-10

Figure 16. Perches for captive eagles in Western Mongolia.

eagles offhand on the wall, middle of garden, behind the house and so on (Figure 16: 1 - 4). Most of settler falconers (S-07, S-10, S-12, S-15, and S-20) provide a mew to put an eagle in for protection from strong sunshine. In general, the Golden Eagle is adopted to cold higher mountains and therefore not suited to spend the whole summer at the Sum center or on the winter pasture. Yet, most falconers were also herders who moved to cool summer pastureland in their seasonal transhumance in old times. The transhumance tradition is a great benefit for health management and providing appropriate environment "***taza awada*** (таза ауада)" to tamed eagles.

While perching at the outside of the mew, a wooden perch is provided for stay. An eagle is bound to the perch with a 1.5 – 2.0 m leash on her legs. If there is more than one bird, each bird is kept away at least 5.0 m distance all the time to prevent "***crabbing***" (= unnecessary fight against other birds). In Sagsai, S-09, S-10, and S-22 possessed two birds in 2011 and next year S-06, and S-10 possessed two birds in one household. The plural eagle owner is not very common in Sagsai. To separate from human and children, eagles are generally perched unhooded on the fence or brick enclosure in the open air, otherwise directly on the ground. This is called "***weathering***" in British falconer's term. But some put her in the middle of garden without any notice or care. At night time or in the mid of winter, such a weathering would not be done, rather eagles are normally put in the mew. The use of a darkened room facilitates handling, enabling the bird to be clasped round the body and cast [Cooper 1968: 562].

There are some common ways of perching style at the herder falconer's households. Birds are commonly perched on the left side of the door (viewed from the outside) inside of the yurt. This is because the left side of Kazakh yurt has been defined as "the male's place", and on the contrary the right side belongs to women. Horse bridles and saddles also belong to the male's place; on the other hand kitchen, tableware, dairy products, and meat are put on the right side. Otherwise, eagles are put behind the yurt for sun shading purpose in summer; this is also the wind shade in windy Sagsai. Locally, the door of the Kazakh house is always directed to the east so as to the northeast quarter of their yurt. Now, most of herder falconers spare a room or space for an eagle as a mew in the winter house (Figure 17). Rough made fences were seen on the summer pasture next to the Sum center in S-22's home (Figure 18). It is mainly used for

Figure 17. Perches for a hunting eagle in the winter

Figure 18. A fence for eagles at summer pasture

1. A captive eagle at the riverside (at Sagsai)

2. T-03 and his bird at the riverside

Figure 19. Hunting eagles perched at the river side in Western Mongolia.

protection of sheep and goats from eagle's assault. If the river is nearby the summer settlement, the eagle is put just aside the river bank for water supply, good air circulation and to keep air cool and clean (Figure 19: 1 - 2). It is occasionally believed by old falconers that a sound of stirring water is tempting the bird for relaxation and recommended [Forsyth 1944: 257]. A flowing river may probably have similar effect onto the bird's mind.

From the end of the hunting season throughout the whole summer time, the Golden Eagle will not have a chance to fly until training starts in every September. Besides, similar to Europe, most of the eagle's life will be spent in the darkness of the hood or at her mew [Fuertes 1920: 435]. In June and July, the master will not let them fly and even takes not much care of them; they are kept in the so-called "***standing***" (= remain in idleness at the perch) condition. In fact, molting makes eagle's flight ability instable and it is insecure to drive her to hard hunting actions. Flying is then only limited to demonstrate falconry in front of travelers. It means that a Golden Eagle will not fly in the sky for almost half a year. Her only task is calmly staying aside of human beings during summer.

4.5.2. Feeding Tasks

Feeding tasks have a central role in the whole manning procedure ("***reclaim***" = to tame/ to reform a bird from wild) between the master and Golden Eagle. When he captured a 10 - 14 day-old *kolbala* eaglet (case at S-11, May 2012), the master daily gave small pieces of flesh (about 100 g) softened with hot milk tea before feeding in the initial stage, especially for small eaglets (Figure 20).

Figure 20. A week-old eaglet tamed by S-11

As for adult birds, a large amount of the Golden Eagle's diet is composed of raw animal flesh in its wild state. Yet under feeding conditions, eagles get to eat many sorts of meats and flesh of domesticated animals as well as rabbit, marmot, pigeon, fox, dog, in addition to boiled and dried meat, dead and carrion or offal flesh (Figure 21: 1 - 2). Their ability for diet selection should be expanded through atypical diets served by her master. However, Mongolian wild cat, Pallas's Cat (*Otocolobus manul*), hunted by Golden Eagle on occasion, would not be given owing to much fat inclusion in their flesh. Further, sheep and goat liver are never fed to eagles, as it is believed to bring about virus-based food poisoning. Biological inspection has not been done, yet liver is sometimes given to eagles in zoos in Japan. However, one case of death of an eagle in 2011 was reported; she was tamed by S-08 who fed her a sheep liver. This eagle died in summer 2012 because of lack of caring knowledge and skills in addition to careless mistakes. Furthermore, some eagles are able to eat river fish (Figure 21: 3 - 4) even though Altaic Golden Eagles are not really piscivorous in nature. In Altai regions, there are two opinions among local falconers if the master should give river fish to Golden Eagle or not. Only

1.An eagle eating a marmot

2. An eagle-owner gave a prohibited sheep lever

3. An eagle at S-22 eating a dace

4. River fish given to a eagle at S-22 (trout and dace)

Figure 21. Daily consumptions by hunting eagles in Western Mongolia.

one informant master (S-22) gave trout and dace (*Leuciscus dzungaricus*) caught at Sagsai River in every September. His eagle was very fond of river fish and devoured 7 - 8 small fish in every feeding time. However, my bird which used to be fed only meat would never eat a river fish. This may be attributed to dietary customs developed in each feeding process. A Golden Eagle's dietary preference is presumably formed in accordance with her feeding environment provided by humans as well as by its parents.

One of the most serious concerns held by all falconers is that eagle's diets often overlap with those of humans. According to observation at S-22, an adult eagle is fed with about 300 g - 500 g of flesh almost every day, otherwise every two days. This amount and interval was average in Sagsai. In summer time, the masters need to feed every day, while they need to regulate the amount of diet in winter. An estimated annual amount of dietary flesh is roughly calculated from the following three cases:

[Case 1] Feeding everyday both summer and winter
1.1: {300 (g) × 365 (days)} = 109,500 (g)
1.2: {500 (g) × 365 (days)} = 181,500 (g)

[Case 2] Feeding every day in summer, and once every two days in winter
2.1: {300 (g) × 185 (days)} + {300 (g) × 90 (days)} = 82,500 (g)
2.2: {500 (g) × 185 (days)} + {500 (g) × 90 (days)} = 136,500 (g)

[Case 3] Feeding once every two days both summer and winter
3.1: {300 (g) × 90 (days)} + {300 (g) × 90 (days)} = 54,500 (g)
3.2: {500 (g) × 90 (days)} + {500 (g) × 90 (days)} = 90,500 (g)

The quantity of meat needed thus ranges from 54.5 kg (Case 3.1) to 18.1 kg (Case 1.2) annually. However, Case 3.1 (54.5 kg) seems to be too small quantity to maintain a hunting eagle in healthy condition. From my personal analysis, Case 2.1 (82.5 kg) should be a minimum amount of meat per year for one hunting eagle (observation of informant master S-22's with whom I was living together). As one local Kazakh sheep/ goat produces 20 – 25 kg of flesh when slaughtered, the minimum number of animals needed per year is equivalent to 2 - 3 heads in Case 3.1, and the maximum is 7 - 9 heads. This becomes a serious burden on the falconer's and his family's food supply. Therefore, falconers frequently need to go hunting to shoot and trap food for feeding their eagle. If falconers face a shortage of feeding flesh, there are some solutions, as is illustrated by the case of S-22 who obtained a lump of flesh from a dead dog body that he bought from his neighbor for 10,000 Tugrik (7 - 8 USD). However, this is not usual. His family has a relatively small number of livestock and the feeding expenditure often becomes a serious burden every year; this is also the case for some of the settled eagle owners in the Sum center. They are not greatly involved in herding and unable to meet the annual reproduction target and increase livestock herd size to the extent needed for feeding the family and the eagle. Therefore, S-09 often goes to the mountain by motorcycle to shoot

prey animals for eagle feed. S-10 and S-15 are also known as skilled trap hunters and provide their eagles with diet from trapping (or shooting by S-10).

For comparison with the Kyrgyz case [Soma 2007, 2008], an experienced eagle master gave a pigeon ("***train***" = feeding birds for a purpose to introduce her toward hunting) to his eagle every day in the hunting off season (from April to August: about 150 feeding days), and every two days during the hunting on season (from September to March: about 105 feeding days). The master obtained feeding pigeons from the market at Bokonbaeva Town for 100 Kyrgyz Som ($_{approx.}$ 3 USD) per each. In that case, the annual total cost for the companion eagle reached to $_{approx.}$ 765 USD for 255 feeding days.

There are several feeding rules and regulations depending on the season - divided into the hunting off season "***tulekte*** (тулекте)" (from March to August) and the hunting season "***kairu*** (қайыру)" (from September to February). The position of March is unclear; some falconers said that hunting will finish in the end of every February and others said hunting can extend until "*Nuvruz* (the Islamic New Year Day on 21st March every year)". However, the main target animals, foxes, grow summer hair in every March, meaning that the quality of fur is not suitable for cloth making or trade and exchange. Therefore, March belongs to the hunting off season in this thesis.

(1) Summer Season: Various sorts of meat, blood, and organs are given to eagles (= "*red feed* (қызыл жем)"). The head of sheep or goats is also preferably given to her. Speaking from an ornithological point of view, "***gorge***" (= to fully feed as she wants) is able to accelerate feather molting to let her weight increase and keep warm, also reported from European falconers [Freeman 1869: 45; Cummins 2003]. Many falconers are not really conscious of this phenomenon. However, falconers feed them with bloody flesh along with conventional manners mentioned above. In order to rapport-making, it is beneficial to feed an eagle on the arm every time. The eagle then becomes comfortable to devour a flesh in mantling posture.

However, during summer time, eagle masters usually have a lot of herding work to do such as care of newborn livestock, daily grazing management, wool clipping, felt making, cashmere hair collection, organization of seasonal mobility, hay stocking and so on. Therefore, masters very often cannot care for their eagle and are sometimes even absent from home. This is quite commonly seen in summer pasture; then the falconer's household and children engage in daily feeding in a somewhat rough way. They just throw a lump of meat nearby the eagle without too much care (Figure 21: 1). Especially every beginning of August, almost all male herders need to do hay stocking and camp at the hay pasture for several weeks. In summary, during hunting off season the masters are not really taking too much care of their eagles. However, some keep a minimum standard of care during summer time. This also points to the positive interactions in the subsistence system between eagle falconry culture and

1. Feed at S-15

2. Feeding by S-07

3. Sliced dog flesh before soaking at S-22

4. Feeding at S-22

Figure 22. A local feeding manner in winter time (Western Mongolia)

transhumant animal husbandry, since proper feeding of the eagle also depends on proper herding works and livestock reproduction. This may sound contradictory to falconry culture in Europe and Japan where special care and skills in taming and keeping procedures were at the center of discourse.

(2) Winter Season: There are several regulations for feeding from September, when no fat and blood should be fed. S-22 insisted to change the feeding time to the night at 21:00 - 23:00 h. He never gave proper feed at other times except a bit of meat along with training sequences. The daily amount of meat is not greatly changed. However, as a rule, a lump of flesh is chopped into small pieces. Besides, the fat is trimmed off thoroughly from the meat. In addition, blood is completely washed off, and these chopped meats are soaked in water for hours (= "*white feed* (ақ жем)") (Figure 22: 1 - 4). If the eagle eats plenty of blood and fat, its stomach is full and she is satiated. As a result, she would not be motivated to hunt. This is the local practice of dietary restriction "***kairad*** (қайрады)", known as "***enseam***" (= diet regulation in order to support the motivation of eagles to fly and hunt) in European hawking and falconry. Eagles are also less satisfied when they have to swallow small pieces of flesh. It is opposed to

devouring lumps of flesh as they normally do in their natural habitat. The master needs to keep this hunger in his companion eagle in order to drive her to more aggressive hunting, as the eagle will then search prey for own food (the technique is called "***bab kelse*** (бабы келсе)").

4.5.4. Training Stage

Training for hunting normally starts in the beginning of September. From the first week of September, the temperature dramatically declines and snowfall starts on the top of the mountains. This is one of the seasonal signs announcing the hunting season. In traditional times, the master spent every day for eagle-training in September and October until hunting activities started. Juvenile eagles (10 weeks old) start to fly in June and have not yet acquired stable flight ability during the summer time. Similarly, adult and pre-adult eagles (from one year-old) are in the molting stage normally from April to the end of August. Both types of eagles would not be suitable for training due to some instability in their flight. In addition, as was stated before, herder falconers also have to do herding works in this period. For these reasons, hunting and even training is not carried out from the end of March until September.

There are some stages in eagle training. It is well known that many Golden Eagles have an unpredictable temper for training, and even some old falconry guides in Britain recommend against training these [Ford 1982: 113-114]. However, Altai eagles are basically submissive if the master has built a good rapport with them. The important thing is the everyday contact with the eagle, to put her hood on, to perch her on the arm, and to feed her enough to elicit camaraderie.

(1) "*Call-off*" Training (= Call Back): The masters anytime need to call back the eagle ("***call off***") in a hunting scene. In the beginning, they simply call off their eagle from the perch to the arm in standing posture. After staying their eagle on the perch, the master turns backward to his eagle with hiding a piece of meat or a rabbit leg called "***chakru*** (шакыру)" on his right hand (Figure 23: 1 - 4). After stepping away 5 - 6 m from the eagle, he quickly shows a leg meat and lets her fly to his right arm. When the eagle flies onto the hand, the master gives some pecking of meat and then immediately puts on her hood, then returns the eagle to the perch again. He repeats this training for 10 - 20 times with keeping a longer distance in each time (example S-07). The masters repeat this training persistently in every feeding time, until their eagle has acquired the habit as a conditioned reflex. Not only at feeding time, falconers used to spend a half day or even a whole day on this training in old times. Well trained eagles eventually learn to wait, to lean forward and immediately fly onto their master's arm as they only recognize the turning-back motion without any commands.

1. Chakle “a calling meat” made from a rabbit rear leg

2. S-22 calls his eagle on the roof off

3. Successful call-off by S-22

4. Call-off on horseback by S-13

Figure 23. Call-off training of Golden Eagles in Western Mongolia.

This is a foundational competence in call off when the eagle clutches a prey far away, and “***rakes***” (= to fly a very wide range) away, or takes to the rock due to a failing hunting attack. If the eagle comes back smoothly, the master saves time and travel distance as he needs not galloping towards the eagle, avoiding extra mobility and exhaustion of both horse and human.

(2) Lure-Dragging Training: It is a more practical training with swinging a fox-pelt lure “***churga*** (шырга)” (Figure 24: 1). The master steps away from his eagle for 10 – 20 m initially with hiding a lure in a cloth or pocket. Then, he suddenly throws a lure on the ground and drags a fox pelt as if simulating a running fox on the ground with shouting and screaming “Seyaa!”, “Hodaa!”, “Ai! Ai!”, and so on. If his eagle comes to assault onto the lure, he puts his eagle again on the original place to repeat the training with a somewhat longer distance than the first time such as 50 m, 100 m, and more. In the early stage of training especially of young eagles, a small piece of meat is garnished inside of the lure to accustom to lure chasing. When the eagle flies to assault on a lure successfully, the master gives some meat and immediately puts on the hood similar to the call-off training. The hunting eagle is driven to her maximum aggression to hunt by hunger so that she is in an extremely excited condition and dangerous

1. Churga “lure” made from a fox fur

2. S-22 release his eagle to the lure from the roof

3. Successful lure-dragging by S-22

4. Successful lure-dragging by S-22

Figure 24. Lure-dragging training of Golden Eagles in Western Mongolia.

after catching the prey. Therefore, a hunting eagle must learn to regain its calmness after successful hunting. This training is carried out normally with assistance. Sometimes, in simulating hunting in the mountains, the master lets fly his eagle from a higher point such as from the top of a roof (example S-22) (Figure 24: 2 - 4).

These two types of trainings, (1) Call-off, and (2) Lure-dragging, are both also carried out on horse-mounted position which is an advanced stage of training. On horseback, the human body and arm mobility is more limited than when standing on the ground. Call-off training on horseback requires a more precise flight onto the master’s arm (according to S-13). Similarly, lure-dragging on horseback needs quicker motions in the shake of the lure.

(3) Actual Fox-Hunting Demonstration: This is often seen after catching a fox in hunting or trapping. Before slaughtering the fox, falconers use the fox as a living training material to let the eagle rejoice and encourage her for hunting in a safe condition (Figure 25: 1 - 2). This brings her to “***yarak***” condition (= physically and mentally finalized condition of hunting mode). According to S-11 and S-22 when they caught a fox in the mountains [recorded on 1st

1. A captured fox with gag

2. S-03 release his eagle to a fox from the roof

3. Successful catch in training

4. Maximum excitement of a hunting eagle

Figure 25. Actual fox hunting demonstration (by S-03, S-11, and S-22)

December 2012], the fox got a mouth gag and a 10 m long leash was fixed to his neck. Companion eagles were flying from the top of roof towards the prey fox. In this case, a neighbor S-03 also joined to train his eagle. Eagles seem to reach their maximum excitement through actual grasp onto the captured fox in the actual fox-hunting demonstration (Figure 25: 3 - 4). The masters let their eagles assault the fox in turns, although the training ended after five assaults due to exhaustion of the fox by deadly scars and talon holes on the body. At the end, the fox was stabbed on his heart and the fur skinned. The fox's heart was given to the eagle which made the initial assault on the prey.

When one of eagles was grasping the fox, she also assaulted on the legs of the other master and me. Even with smaller treat birds the master needs a proper procedure to remove the quarry from the eagle, such as kneeling down, then whistling as at feeding time, the arm gently extended to the quarry, thereby avoiding sudden motions [Sebright 1826: 23-24]. Due to the Golden Eagle's temper in hunting scene it is essential to create a good rapport with the companion eagle. Without a rapport between master an eagle, the hunting eagle is extremely dangerous even to her master when in "***carry***" (= move away with the captured quarry) mode.

4.6. Result III:

Falconry Equipment and Taming Characteristics

4.6.1. Indigenous Reclaiming Style and Material Culture

Falconry equipment of Altaic Kazakhs is uniquely diversified and closely connected to the original format of ancient falconry culture. Local distinctions of taming processes and hunting styles are well reflected in the form of material culture among Altaic Kazakh falconers. This section briefly introduces four essential falconer's items (hood, gantlet, jess, and arm brace) and a variety of equipment needed in the taming process for (1) Settling, (2) Feeding, and (3) Training. Almost all gears and items described here were observed or obtained from eagle masters at Sagsai territory. The section correspondingly addresses usage and production of falconry equipment as a unique indigenous material culture including artistic subject matters in the Altaic Kazakh community. The initial aim is to paraphrase current falconry equipment of Altaic Kazakhs as a basic research foundation. Furthermore, comparative analysis with European, Asian, and Arab falconry culture will reflect the whole picture of falconry culture in Mongolia. Interpretative explanation of equipment is also derived from own experience in feeding and handling one Golden Eagle.

4.6.2. Basic Gears for Falconry Practice

(1) Hood (*Tomoga*): The hood "***tomoga*** (томаға)" is the most important item to make an eagle still and quiet at home and within the human living sphere (Figure 26: 1 - 10). Golden Eagle is often very sensitive when their eye-sight is not obstructed, sometimes resulting in assaults on livestock, small children, or other eagles nearby. On the other hand, hunting eagles become calm without their eye-sight. Falconers normally put a hood on all day long except at feeding time. Some falconers put a hood on even inside of the mew, which means that hunting eagles are kept in darkness except at feeding, training, and flying in hunting operation.

In general, the Altaic Kazakh's hood is of the so-called "Anglo-Indian type" in European falconer's terms, differentiated from the traditional European "Dutch type" [Ford 1982: 47]. It is generally used for a large bird with a thick beak. There are two types of hoods in Altaic Kazakhs, one for adult and the other for juvenile. The average size of the adult hood is about 7 – 8 cm in height (without a top ornament), 10 – 11 cm in length, and 8 cm in width (Figure 26: 1 - 8) and the juvenile one is about 6.5 – 7 cm in height (without a top ornament), 9 – 10 cm in length, and 7.5 cm in width (Figure 26: 9 - 10). The juvenile hood is not really commonly

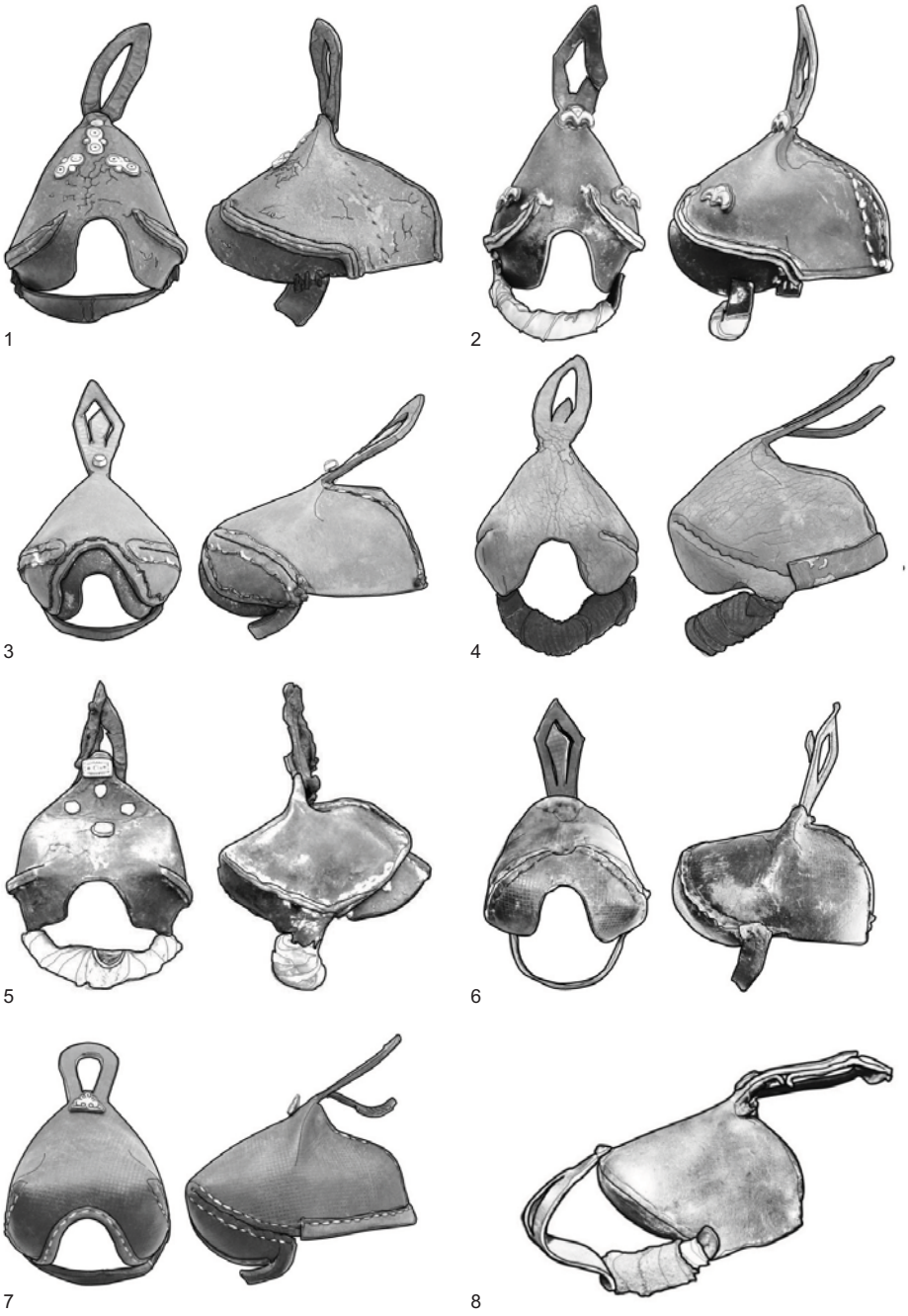
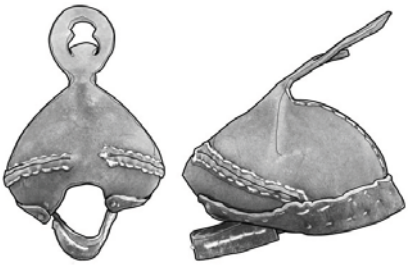
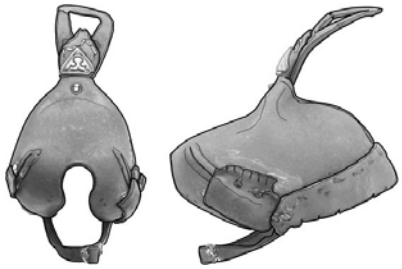


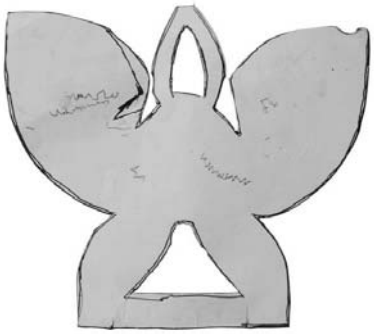
Figure 26. Hood (Tomoga)



9. Hood for young and juvenile bird



10. Hood for young and juvenile bird



11. A pattern paper for hood-making

Figure 26. Hood (Tomoga)

used now. The top ornament (generally 5 – 6 cm long) is used by the master to hold a hood with his teeth when taking it off on the horseback or at feeding. Some hoods are elaborately ornamented with glass and silver rivets for festival and ceremonial purpose. A hood always demonstrates individuality and uniqueness in ownership at the meetings and festivals. For that reason local falconers have a certain kind of attachment to this item.

Traditionally, the masters themselves made their hoods taking account of the head size and preference of individual eagles. Some owners used wax for fixing and smoothing the inner surface of the hood. One eagle possessed by S-11 showed frequent screeching at both field and home. This habit is harmful and results in expel of prey animals during the hunting operation. S-11 attached a beak-bind ring on the front of hood to retain her behavior (Figure 26: 8). Analyzing the museum collection at an exhibition at National History Museum of Mongolia, Ulaanbaatar, it seems that the shallow type hood might be of older style than the current type. A piping treatment of the edge or behind part also seems to be a recent design. A hood is made and stitched without any space. However, during summer time, the eagle's head is often wet from sweat when the hood is taken off. Golden Eagle is adapted to high mountain places at more than 3,000 m altitude with cold environment and not really to hot condition like a lower winter pastureland. From an animal welfare point of view, some openings should be

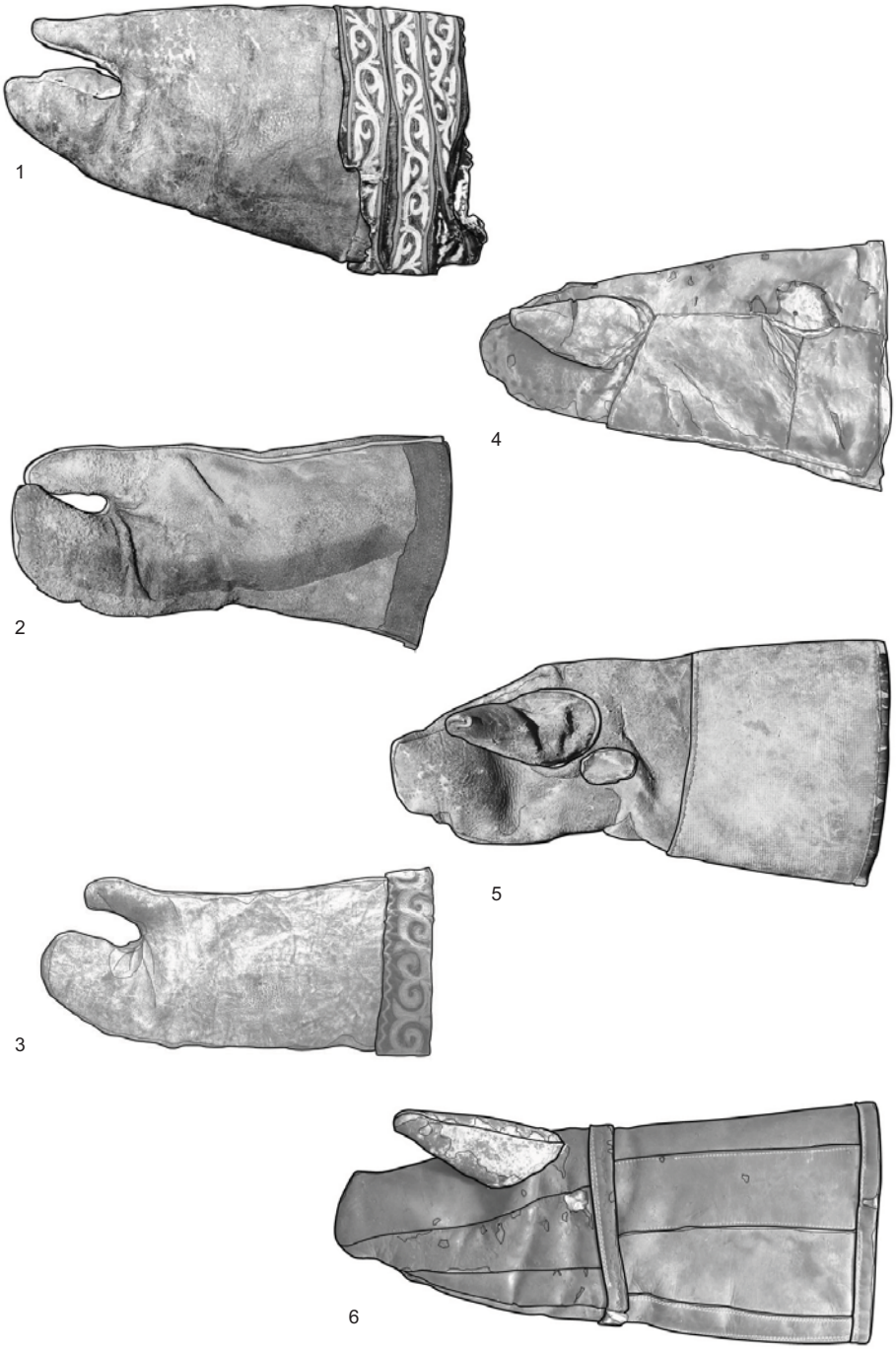


Figure 27. Gantlet (Bialai) of Eagle Hunters in Western Mongolia.

inserted on the top of hood to provide ventilation and prevent heating inside. However, the seam of the leather needs to be closely joint to prevent light glimmer reaching the eagle's eye [Cox 1899: 243]. The pattern paper for a local hood (Figure 26: 11) is often transmitted over generations. Sometimes an old hood is undone along its seams to have a pattern for making a new one. The shape of this pattern is called similar to "a wing-spreading eagle" and local falconers therefore have special attachment in traditional context.

The Anglo-Indian hood was considered as most comfortable to hawks nevertheless it was possible for the eagle to take the hood off with her talon and was therefore not used by European falconers [Cox 1899: 243]. Such getting-off behavior was hardly seen in Altai. However, S-22's eagle started to get the hood off just before the hunting season of 2012, because her weight was increased and the hood did not fit on the head anymore (according to S-22). A new hood also gives some uncomfortable feeling to the eagle in the beginning and results in getting off attempts.

The hood is generally thought of only a blind to restrict physical eyesight from an eagle. Of course, young and less trained eagles dislike wearing a hood and sometimes show "hood-shy" behaviour in the beginning. It is often difficult to put a hood on and therefore this is one of the first inevitable steps in the taming/reclaiming process. Prevention of hood-shy temper was considered as the most significant step of the taming process in Britain [Cox 1899: 261]. More practically speaking, the hood is an essential gear to "subordinate" the eagle and at a same time to have her recognize the master with daily hooding by the master's hand.

(2) Gantlet (*Bialai*): The gantlet (gauntlet) "***bialai*** (биалай)" is a thick leather glove to perch an eagle on the arm (Figure 27: 1 - 6). Unlike the European left-handed style, Altaic Kazakh falconers perch an eagle on their right arm from ancient time. This is probably due to the fact that nomadic herders ride on the horse from their left side. In addition, riders hung a bow, arrows, sword, and other luggage on the left side of the horse in ancient times (see Part I). Therefore, the right-handed style should have deeply been enrooted in local falconry for a long time.

Traditionally, the five finger separated glove has not been used widely in this region, but the mitten glove is dominant. This mitten gantlet is separated in two types; "the flat type" (Figure 27: 1, 2, 3) and "the glove type" (Figure 27: 4 - 6). The flat type is made with a flat symmetry pattern. The glove type is made with an independent thumb hole on the inside (left) of the gantlet. Both types are widely used without functional distinction, rather chosen according to individual preference. The gantlet is normally made from cow and goat leather. But ibex or deer skin is preferred due to its softness and thickness. Kyrgyz falconers also used the neck part of deer or elk skin as the best material for gantlet making. Even though goat leather is the cheapest and most usual material obtained from daily consumption, the material loses its

softness after a few years and can no longer be used. Local falconers also used old leather boots to make their own gantlet (Figure 27: 5). The foot part is replaced by a glove and the leg part is rearranged as an arm-hole part. Some gloves are ornamented with local embroidery by a master's wife or household for ceremonial purpose.

From personal experience, with the flat type gantlet it is sometimes difficult to move thumb and fingers independently. Therefore, it is necessary to rotate the wrist with the arm itself left when grasping the jess. As a result, an eagle sometimes steps out and then is unstable on the perch of the arm.

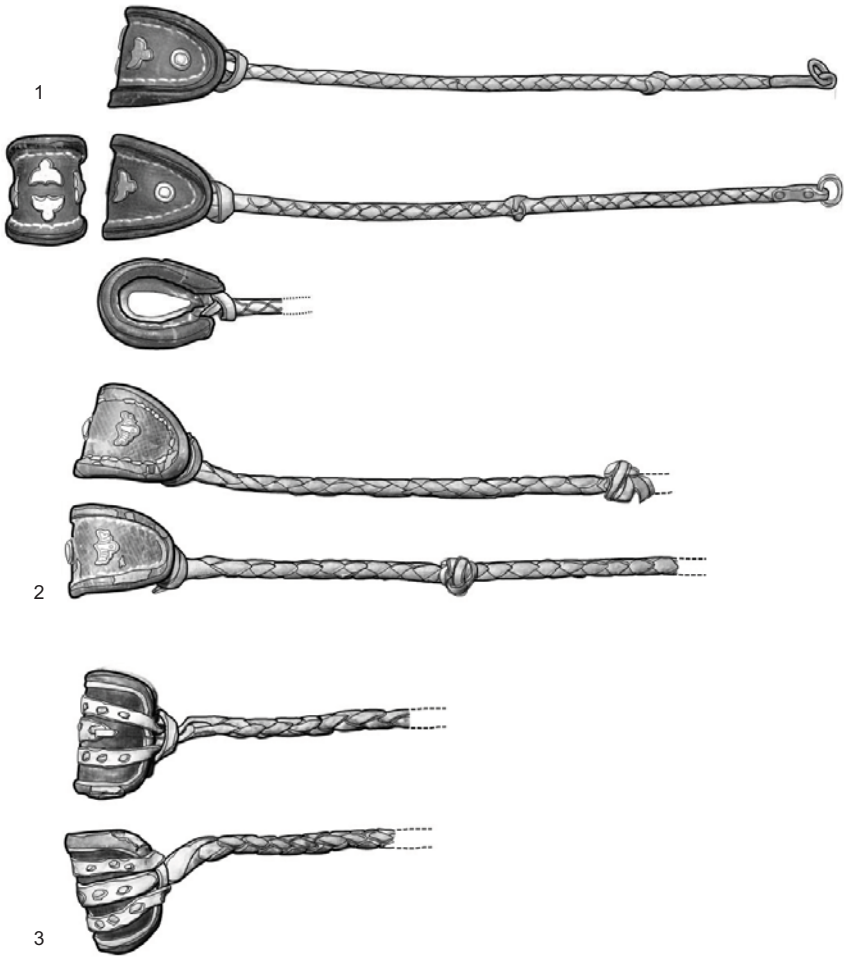


Figure 28. Jess (Ayak bau) for Golden Eagles in Western Mongolia.

(3) Jess (*Ayak bau*): The jess called "***ayak bau*** (аяқ бау)" is a braided leather cord attached on both legs of an eagle (Figure 28: 1 - 3). The falconer grasps these cords all the time during perching of his bird. They also fly an eagle with the jess attached.

The total length of the cord is about 40 cm. A leg bracelet is attached to the eagle's legs. The total length of this bracelet is about 10 cm, and 5 – 7 cm in width. The inner diameter is about 2 cm, fitting to the eagle's foot. A metal ring is also attached on the other terminals to connect to a leash when settled. Some have a knot in the mid of the cord to prevent slipping in the palm. Bells are never attached on the eagle's legs, while this is inevitable in European and Arab falconry. In comparison, the length of jess for short-winged hawks has been reported to be 5 - 6 inches (12.7 - 15.2 cm) in Britain [Campbell 1773: 127].

In Sagsai, there were two eagles that lost one talon probably due to fox-bite (owned by S-05 & S-06). Therefore, a hard and thick leather bracelet should be effective for actual hunting as a protection from bite by wild foxes. Sometimes, a narrow leash will rub and injure the legs if eagles have unsettled temper such as "***bate***" (= attempt to fly or escape under bound situation) at home. In addition, falconers fly their bird with jess in hunting and training scenes. For reason of adaptation, it may thus be necessary to attach a jess even in daily training.

(4) Arm Brace (*Baldak*): The arm brace "***baldak*** (балдак)" is a Y-shaped pillar to support the falconer's right arm while on horseback (Figure 29: 1 - 7). This arm brace is attached on a front panel of the saddle for fixation. It is a unique equipment of Altaic Kazakh falconry and was never used in other falconry cultures in Europe or Asia. Altaic Kazakh falconers only use heavy Golden Eagles with adult weight reaching 6 – 7 kg. In addition, they always hunt on horseback. It is eventually painstaking to carry an eagle all the time without any support.

The length of arm brace is about 45 – 55 cm according to the herder's body size. Wooden material such as poplar, pine, and birch tree are normally chosen for production. For daily use, falconers cut a suitable branch from a tree, and later re-shape and dry it near the fireplace for several weeks (Figure 29: 1). The ornamental twist of the pillar shows traditional motifs and is widely seen (Figure 29: 2). For ceremonial purpose, some arm braces are also made from more precious organic materials such as ibex horn (Figure 29: 5). One of the oldest arm braces in Sagsai is made from deer antler and has been used now for three generations (Figure 29: 4). In fact, there are also special arm braces if the falconer tames a big kind of bird in Britain [Ford 1982: 40-41]. Without an arm brace, Altaic Kazakh falconry would not be practiced effectively.

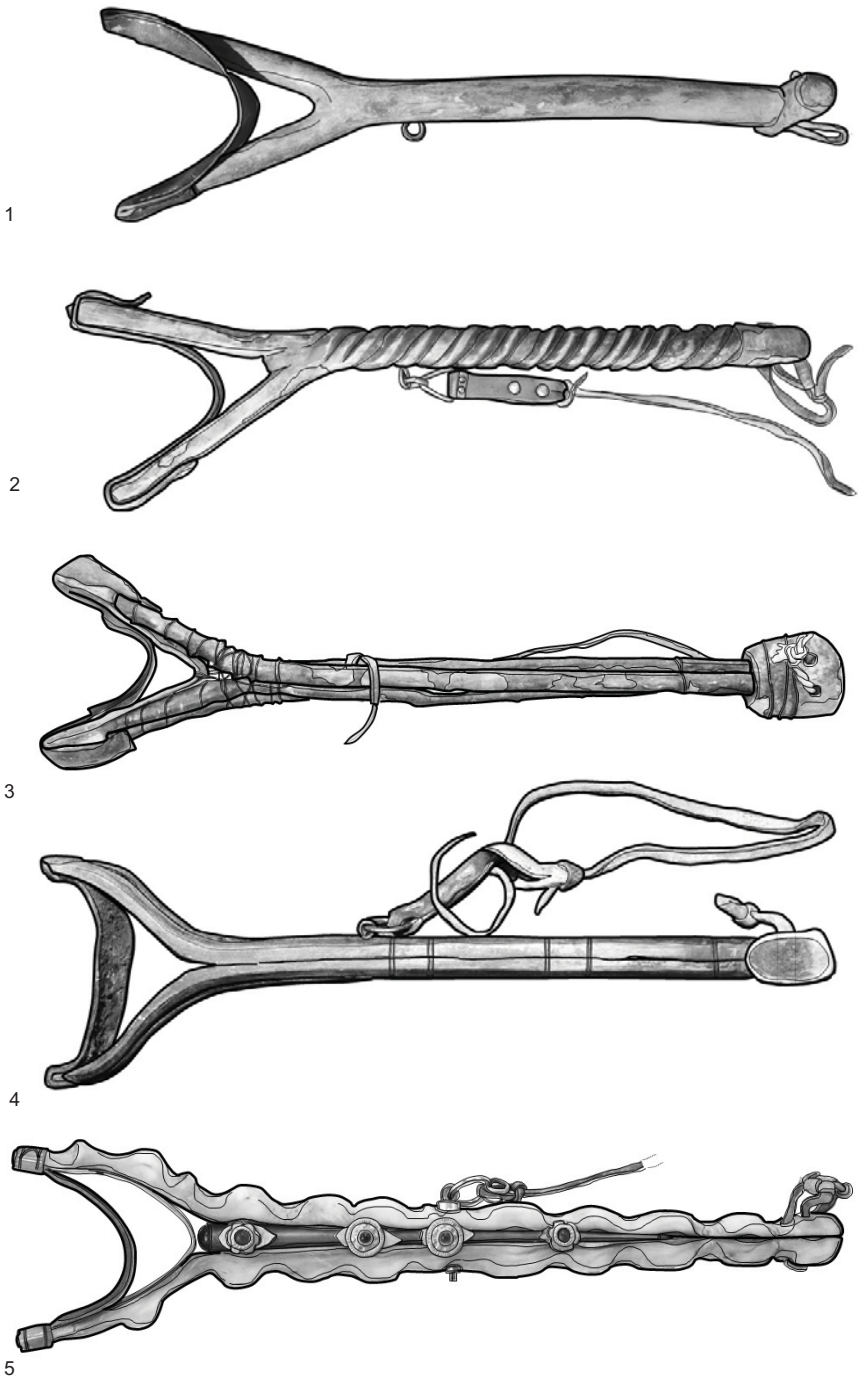


Figure 29. Arm brace (Baldak) for Golden Eagles in Western Mongolia.

4.6.3. Items for Settling Practice

(1) Perch/ Block (*Tugur*): Hunting eagles are normally rested on the wooden perch called "***tugur*** (тұғыр)". This is traditionally made from a wood with three legs (Figure 30: 1). However, not only such a tripod style, but also a natural timber, brick, stone, and old tire are used for a perch (Figure 30: 2). In general, trees or timber are not abundant around Sagsai territory. So, simple driftwood is also a preferable material for use (Figure 30: 3). There is a unique fox-shaped perch (in the collection at Ulgii Provincial Museum) (Figure 30: 4). The ibex horn perch is also produced for more prestigious purpose. In previous times, young or less tamed birds were perched on an unstable rope to develop their balance sensitivity before perching on the arm. Practically speaking, soft materials such as wood or rubber should be preferred to prevent damage onto the eagle's talon ("***pounces***"). There is a movable type of perch "*Chamber Perch*" (a narrow and high table like stand) used in British falconry. With letting hawks accompany the falconer to anywhere they experienced various atmospheres, which was considered to accelerate taming [Campbell 1773: 129].

Eagles also have own preferences to perch on. In general, there are very few tall trees around Sagsai territory. This may affect the perching behavior of local Golden Eagles which

1. A traditional tripod perch (S-07)

2. An old tire for a perch

3. A drift wood for a perch (S-06)

4. A fox-shaped perch (at the Ulgii Museum collection)

Figure 30. Types of perches (Tugur) for Golden Eagles in Western Mongolia.

normally rest mainly on rock or stone. In fact, my bird would not rest on the natural wooden timber perch which I prepared and always perched on the stone next to it. If the eagle's perching place needs to be fixed, the master should feed her to make her perch on the intended place.

(2) Leash & Swivel (*Arkansha & Ailansok*): The leash and swivel "***arkansha*** (арқанша) and ***ailansok*** (айлансоқ)" is used for binding an eagle to a perch at home (Figure 31). The length of the leash is depending on each falconer, but at least 1.5 – 2.0 m is necessary. It is uncertain when the iron swivel came into use, but it is never sold in market places. It is made from garbage iron plate and wire by falconers themselves. A leash was customary made about 2 feet (61 cm) long in British hawking [Campbell 1773: 127], or 3 feet long in modern times [Cox 1899: 246]. When a knot of lope became very difficult to undo, a gazelle horn hook called "*katur* (қатыр)" was used in old times (Figure 32).

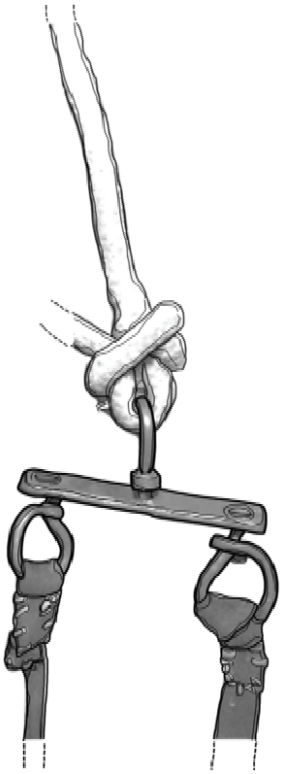


Figure 31. Leash and swivel from Western Mongolia.

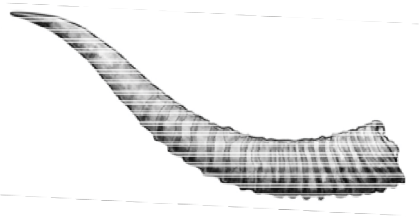


Figure 32. Gazelle horn (Katur) from Western Mongolia.

4.6.4. Items for Feeding Practice

(1) Feeding Bowl (*Saptu Ayak*): For every day feeding, a wooden bowl "***saptu ayak*** (сапты аяқ)" is used to serve meat at home (Figure 33: 1 - 3). The bowl is carved from a lump of timber material such as a poplar tree. Meat is served by the falconer himself. According to the local manner, meat is chopped into small pieces and then soaked with water for hours to expel its blood completely. The water is discarded before serving (Figure 33: 4). For this reason, a feeding bowl has an oval shape with a handle. In the winter, overgrown beak (and talons) is trimmed (= "***coping***") because it is otherwise uncomfortable to eat from the bowl; at the same time this prevents injuring a fox fur (Figure 34: 1 - 2). For this purpose, clipping pincer "***coping-irons***" are used in Britain. From a practical point of view, a coping treatment for prolonged talons is strongly recommended in any case to minimize a danger of puncture on own foot [Cooper 1968: 564].

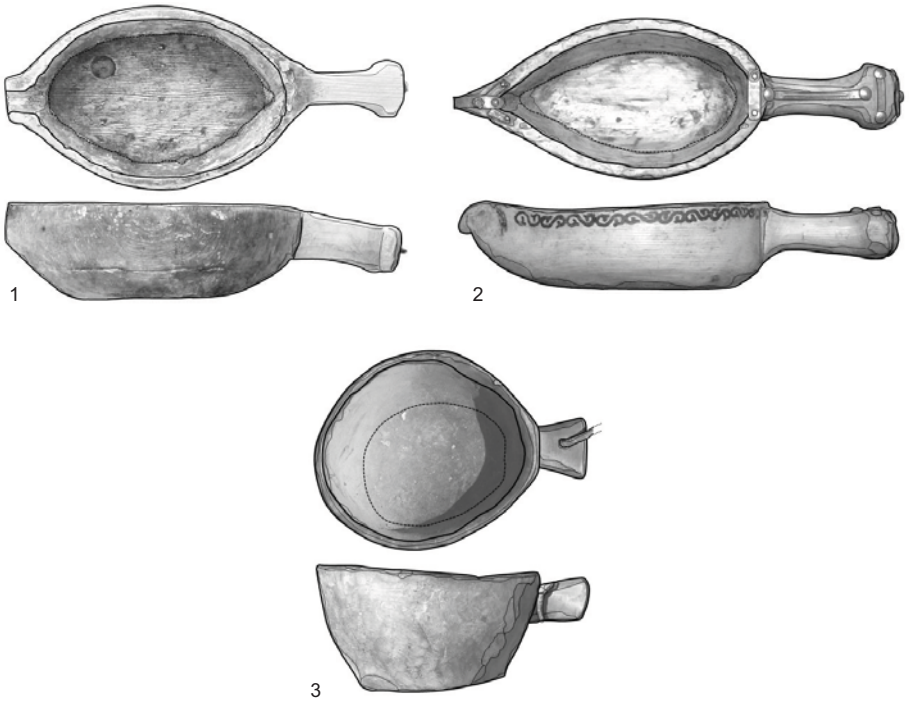


Figure 33. Feeding Bowl (Saptu Ayak) for Golden Eagles in Western Mongolia.

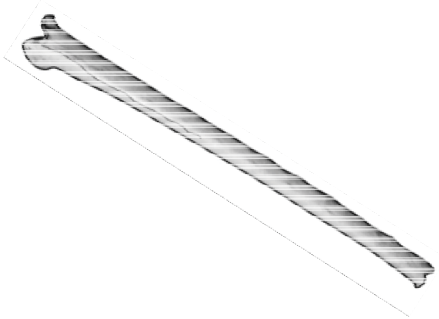
(2) Drinking Tube (*Tutuk*): "***tutuk*** (тутік)" is a tube for forced drinking (gavage) of water after feeding or before hunting (Figure 35: 1). This is also a unique local manner in the taming process. This water-gavage practice intends to keep eagle's stomach clean and accelerate digestion ("***put over***" = move eaten feed from crop to stomach) in order to promote her appetite. After training, S-13 forcefully served two cups of water (about 150 – 200 cc) by mouth-to-mouth to his eagle (Figure 35: 2) [Soma 2012e]. This will flush the stomach and accelerate to cast a pellet out or trigger excretion. Before lure dragging demonstration at The Golden Eagle Festival, S-09 gave to drink a cup of black tea to his eagle.

Local people said that in previous days this tube was made from a shin bone (the tibia) of Common Crane (*Grus grus*) by hollowing the inside off. While actual material was not seen, there is a similar bone tube (probably the ulna) taken from Cinereous Vulture (*Aegypius monachus*). The length is 28.5 cm and just reaches to the "***pannel***" (or "***gorge***" = craw/ crop) of Golden Eagle. In recent times, falconers use a rubber tube for water-gavage but it is not frequently practiced because a great part of traditional knowledge about eagle's health care has been lost today.

1. Coping scene at S-22

2. Coping scene at S-22

Figure 34. Coping a beak for winter feed in Western Mongolia.



1. A bone tube made from Black Vulture's wing bone

2. Water-gavage after training (S-13)

Figure 35. Bone Tube (Tutuk) for Golden Eagles in Western Mongolia.

Normally, a healthy eagle does not drink a lot of water by herself. Once, my bird suddenly started to drink a great deal of water after 2 successive days of insufficient feeding. It indicates that her stomach had been empty for half a day or more. A sick hawk will frequently drink water and will take over 12 hours to empty its crop [Cooper 1968: 561]. Hence, Altaic Kazakh falconers never give their eagles water to drink by themselves in the winter season.

(3) Flushing (Casting) Tablet (*Koya*): For a similar purpose like water-gavage, a small wooden tablet named "***koya*** (қоя)" (Figure 36: 1) is also used to "***cast***" (= to flush) animal hair, undigested materials, and impurities from craw and stomach. It is of similar size as a bone of a small prey animal such as rabbit or fox, and used to accelerate regurgitation of a pellet (Figure 36: 2) of undigested material after feeding. A flushing tablet is also used for newly captured young or pre-adult birds to flush before reclaiming.

The flushing tablet is made from a small branch of poplar tree. The falconer reshapes it to cylindrical shape with carefully planning off the edges. The size is about 6 – 7 cm in length and 1.5 cm in diameter. Then, the falconer curves a 5 mm round small hole on both top and bottom face. This makes hair and rubbish stick to the tablet easily. In general, roughage diets will not be given, unlike in Europe where falconers dare to give fur or feather together with daily feed. These fibers contribute to stipulate writhe of intestines. In summer the master "*gorges*" with heads of sheep or goat, and lumps of meat with bones and hair naturally are ingested, which rarely happens in winter. Therefore, the flushing tablet is used to assist digestive function in winter, especially before a hunting day.

Informant S-15 gave three blocks of cube sugars after shaving off the corners beforehand. S-11 put a small snowball into the eagle's throat at the hunting field. Sometimes, a block of ice is also given [Bodio 2001]. But there is a little contradiction in that sugar is normally given for slowing digestion [Lloyd 2010: 19]. This is a similar feeding treatment to "***rangle***" (= a small stone to give together with feed) to assist her digestion although already an obsolete manner in a way of British falconry. It is well known that healthy birds will cast off a firm and well wrapped pellet [Freeman 1869: 16]. Some hawks will appear restless and unwilling to fly prior to ejection of a pellet [Cooper 1968: 561]. Mice flesh seems to have an excellent casting effect in peregrines although it often takes the stomach up altogether [Freeman & Salvin 1859: 86].

In personal observation at S-22's home, the flushing tablet was force-pushed into the eagle's throat after feeding at 22:00 h before a hunting day. Then, the hood was not put on the head until the morning. After around 3 hours, the eagle cast up the tablet with animal hairs and rubbish sticking on it. Beforehand, the eagle opened her beak with shaking her head right and left to try to vomit.

1. A flushing tablet made by S-22

2. A pellet cast off at S-22

Figure 36. A casting tablet (koya) for Golden Eagles in Western Mongolia.

Figure 37. Feeding Poach (Jem Karta) for Golden Eagles in Western Mongolia.

(4) Feeding Poach (*Jem Karta*): The falconer hangs a feeding poach "***jem karta*** (жем қалта)" on his left in training and hunting (Figure 37: 1 - 4). This poach is highly decorative for ostentatious purpose with traditional taste embroidery done by the falconer's household (Figure 37: 1, 2, 3) and often with medals on it. One of them was made from two pelts of Maskrat (*Ondatora zibethicus*) (Figure 37: 4). Usually, a lump of meat, a drinking tube and a calling meat (*Chakru*) are put inside. The common shape is two semicircles on the bottom which separate a left and right room.

1. A lure made from Corsac Fox fur used by S-15

2. Patchwork made lure used by S-12

Figure 38. Lure (Churga) for Golden Eagles in Western Mongolia.

4.6.5. Items for Training Practice

(1) Lure (*Churga*): A lure "***churga*** (шырға)" is mostly made from a fox pelt to "***enter***" (= to train a bird for a particular target) (Figure 38: 1 - 2). It is infrequently made from a rabbit or other animal fur. In Altaic Kazakh falconry, the central hunting targets are mainly Red Fox and Corsac Fox. This is because the winter-hair fox-fur is the most important material for making traditional winter clothes and traditional Kazakh fur hats. In fact, tamed hunting eagles are able to hunt various animals, for instance, from observation, a rabbit, owl, Pallas's Cat, and even wolves. However, local falconry in the Altai region is defined as "fox-hunting" in the traditional sense. Therefore, a fox-fur lure will have more practical effects in training. A resemblance with the targeting quarry is required [Cox 1686: 29].

(2) Calling Meat (*Chakru*): A calling meat "***chakru*** (шақыру)" is used to call the eagle off at training and in the hunting scene. It is made from a rear leg of rabbit or fox (Figure 39). A rabbit leg might be preferable and handy size to swing. A fox-leg is also used for call-off. The meat is cut off at the hip joint and dried up for some days. When the master calls back his eagle, he grasps a calling meat with his right hand to shake and spit at the meat. This is because local falconers believe their eagle well remembers the master's smell of saliva.

(3) Eagle Socks (*Ayak kap*): In severe hunting seasons, the eagle's legs are covered by a pair of leather socks called "***ayak kap*** (аяқ қап)" in old times (Figure 40). This protects the eagle's legs from frostbite in the cold mountains. However, nowadays most of falconers never go hunting and even do not have any hunting activities. Therefore, this kind of socks is currently no more seen in actual material culture at local places.

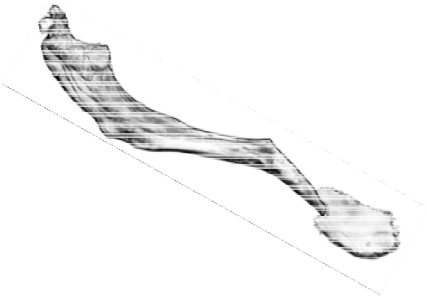


Figure 39. A rabbit leg meat (Chakru)

Figure 40. An eagle's socks (Ayak kap)
(Photo taken at Ulgii Provincial Museum)

4.7. Discussion

Comparative Analysis of Taming, Reclaiming, and Rapport-Making

4.7.1. Comparable Features in Reclaiming/ Taming Procedures

(1) Selection of Birds: The bird selection was the most important initialization of falconry. Altai falconers only tame female Golden Eagles, even though a wide variety of raptors inhabit the western part of Mongolia. Rather the idea of single bird selection (only female Golden Eagle) itself sounds very unique in the context of worldwide falconry culture, and delineates a nomadic taste of the classical falconry. "*Boke of St. Albans* (1486)" stated 12 species of raptors: "Emperor: Eagle, King: *Gerfalcon* and *tiercil of gerfalcon*, Prince: *Falcon gentle* and *tiercil gentle*, Duke: *Rock falcon*, Erie: *Peregrine*, Baron: *Bastard*, Knight: *Sacre* and *sacret* (Saker), Squire: *Lanare* and *lanret* (Lanner), Lady: *Mezlyon* (Merlin), Young Man: *Hobby*, Yeoman: *Goshawk*, Poorman: *Tezcett*, Priest: *Sparrowhawk*, Holywater Clerk: *Muskayte*" [Fuertes 1920: 433]. In contemporary China, at least 14 species of birds of prey are in use of falconry activity [Xiaodi et al. 2002].

According to British falconry, falconiform so called "*long-winged*" (Saker, Lanner, Peregrine, and Gerfalcon) raptors, also termed "***Hawks of the Lure***", had been preferred by people and ranked higher than accipitrine birds, the so-called "*short-winged*" (Goshawk and Sparrow Hawk) species. The reason of this social disparity can be ascribed to characteristics in hunting style between falcons and hawks. Falcons exert their hunting ability at open space such as heath, agricultural land, pasture, or grassland. Hawks, especially Goshawk, are rather able to adapt to more narrow land like a forest, and enclosed land [Harting 1895: 219-226]. Hunting style by falcons is thus not restricted greatly by landscape or topography. Open space also well provided the scene to entertain hunting participants. In addition, hunting raptors should be

able to hunt game birds, waders, fowls and mountain birds such as pheasants, grouse, partridge, heron, duck, magpie, heron and so on – with this the hunting season was not limited to a certain season in a year. Limitation of hunting on season to winter seems to entail to the single selection of Golden Eagle in Altaic Kazakhs.

In Britain, only short-wings were used, formerly male and female birds, later only the female one was chosen as a traditional rule [Freeman & Salvin 1859: 37]. Goshawk (*Accipiter gentilis*) was popular, although mostly used by low-ranked people. A short-wing was surmised to taming in medieval Czech [Mlikovsky 2005]. Likewise in medieval Japan, Northern Goshawk was the most widely used bird due to their dietary breadth [Otsuka 2006: 198]. Occasionally it was stated that Sparrow Hawk was considered more difficult to get into flying than other birds [Freeman 1869: 43]. Well-motivated birds were preferred by people of the higher social rank in old British society. Hamilton [1860: 291] stated that the male Goshawk is more active on the wing than the female one. The size of the female body was reported 1/3 larger than the male one [Wood 1876: 134]. She always showed a sharp stoop toward the quarry from the sky. The Goshawk usually does not soar high [Wood 1876: 134]. In comparison to European falconry, eagle falconry will not really entertain the audience with versatile hunting mode. Generally, eagles are considered slower than falcons and hawks [Bolton 1997: 154]. Although slower than other hunting accipitrine “short-wings”, the temper and nature of Golden Eagles seems to be more docile. However, Goshawk was no more captured in England in the late 19th century and the best ones were usually brought from Norway [Lilford 1903: 133]. Depopulation of hunting birds appears to be one factor of decline of British falconry.

(2) Capture Manner: Procurement of eaglets from natural nest was strongly recommended in the world-wide falconry context, not only in Altai but also in Britain in old times. Especially at the coastal areas of Britain, some specialized cliff-men used to engage in capture of Peregrine eyas from the nest on the chalk cliffs. The right moment for capture was days before the bird is nearly fledging but has not yet left the eyrie [Cox 1899: 254]. If falconers reclaim a hawk from the eyas stage, the captive-bred eyas will grow to the best hawk, which is the same belief as of the Altaic Kazakhs. Campbell [1773:160-161] also mentioned some advantages of captive-bred eyas that will come back to falconers’ house even if they got astray in the hunting field - on the contrary to the haggard that often flies away due to its strong affiliation with nature. Haggard and passage birds were also considered more effortful in training than eyas because of their powerful resistance against reclaiming [Cox 1686: 12; Hamilton 1860: 283]. In such a case, the master needs to perch his haggard bird on the wrist until she becomes not frightened [Hamilton 1860: 279]. Altaic Golden Eagles have a similar tendency, especially when reclaiming elder haggard birds. According to the classical European way of initial contacts with a captured haggard, the master let her into darkness for several days and waking, and starving. However, these kinds of forceful disciplines were depending on the

species and not really recommended for birds in the modern falconry since the beginning of the 20th century. Thus, traditional Kazakh falconers insisted on capturing *kolbala* eaglet in order to effortless *gentler taming*.

(3) Falconer's Classification of Hunting Birds: The local classification of birds reflects own expertise in indigenous falconry context. For example, the British recognition shows a diversity of proper names, so-called ethno-ornithological expressions, at each age, stage, and status of the captive birds (with reference to "*A Treatise of Modern Faulconry* (1773)"). Especially the status of the 1st year hawk until 4th year are specified by unique expressions listed below (#1 - #5 refer to Campbell [1773:137-139], #6 - #9 to [Cox 1686: 4; Hamilton 1860: 272], and #1.1. - #1.4. refer to Walsh [1861: 219-220]).

#1. "*Eyasse (Eyas)*": A general term of eaglets staying at the aerie.
#2. "*Ramage Hawk*": A juvenile bird after fledging during June, July, and August.
#3. "*Soar Hawk*": A young bird during September, October, and November.
#4. "*Carvist (Murzarolt)*": A young bird from December to next middle of May.
#5. "*Mewed Hawk*" or "*Enter Mew*": given to the Carvist from the middle of March.
#6. "*Soarage*": The 1st year of hawk including #1 - #5.
#7. "*Enterview*": The 2nd year of hawk.
#8. "*White Hawk*": The 3rd year of hawk.
#9. "*A Hawk of the First Coat*": The 4th year of hawk (thereafter numeral-added name).
#1.1. "*Brancher*": An eaglet which can hop but not fly yet.
#1.2. "*Hack Hawk*": A young hawk reared at liberty.
#1.3. "*Lantiner*": A young hawk captured before the Christian Lent.
#1.4. "*Haggard*": A young hawk captured after the Christian Lent.

The first year hawk (particularly Peregrines) is also named "*Red Hawk*" with similar meaning as "*Soar Hawk*" [Cox 1899: 253]. Gyrfalcon also acquired a special name "*Surpunic*" or "*Serpanic*" in 13th century because of its rareness [Schutz 1936: 175-181]. Spanish medieval falconry, stated by Don Juan Manuel in the 14th century, classified long-wings for five classes [Adams & Bond 1969: 110]. The age of hawks are also distinguished from traits of their talons. Forth [2010: 223-237] shows onomatopae of singing, behavioral, and visible feature links for indigenous determination of bird's names in Malayo-Polynesian terms used by the Nage people of Flores Island (eastern Indonesia) where a more classical nomenclature system of local ethno-ornithological expressions exists. For comparison, Kyrgyz eagle masters classified Golden Eagle into 13 types with indigenous names which reflect body traits and color of body parts, feathers, eyes, beak (Table 3). Contemporary Altaic Kazakhs might have lost these indigenous classification and nomenclature system which is not extracted from local falconers.

Table 3. A classification of Golden Eagles by the Kyrgyz eagle master

	Indigenous Name	Meaning
1	Jampos Geritebos	Red Brown
2	Sulgak	Beautiful Coloured Feather
3	Jelbegay Sulgak	Beautiful Shoulder
4	Jeldedu Sulgak	Beautiful Winds
5	Kokkamti Belen	Vivid Red
6	Guk Ayak	Blue Legs
7	Kandigal Kara Sansan	?
8	Alatoo-non Akeen	White Shoulder of Snow Mountain
9	Kara Atuk	Dark Dawn
10	Mai Chegil	Eyes of Money
11	Bai Chegil	Eyes of Wealthiness
12	Shamshaal Tomshuk	Straight Beak
13	Choldun Salus	Yellow of Desert

* Names are collected from KI-01 the skilled master in Bokonbaeva, Kyrgyz

The falconer's classification terms are not only based on actual years spent, but also growth of feathers and molting "***tulek*** (тулек)" times. The 1st year and 4th or 5th year seem to be very important for both birds and the masters. Especially, a versatility of classifications of 1st year bird in Britain represents careful attention toward an initial stage of captive birds. It was believed that hawks which did not join to hunting in the first year would never be a good hawk [Cox 1899: 253]. The name of hunting birds is changed when 3 - 4 year-old (as is #9) both in Britain "***A Hawk of the First Coat***" and Altaic Kazakhs "***Ana***". Kyrgyz falconers also regard 5 year-old eagles "***Bartin***" as a fully matured adult. It is recognized as "a matured bird" thereafter and their age corresponding to sexual maturity has been considered as an initiation of adulthood in falconry culture. Given the existence of local names after "*ana*" birds, Altaic Kazakhs also should have been engaged in capture and reclaim of haggard eagles in their history.

(4) Feeding: Overall, Altaic Kazakhs and British falconry have many similar features and styles in feeding. However, the total feeding regime by European falconers is elaborated with more strict and complicated procedures than by Altaic Kazakh. British falconers feed washed meat to haggard hawks in order to render her exhilarated power weaker and serve her in evening time for more "sharp set" in day time during reclaiming and trainings [Hamilton 1860: 283]. This manner seems to be one of severe treatments for insistent reclaiming of haggard birds which is identically done by Altaic Kazakhs in daily feeding (like S-22). Campbell [1773:154], the British hawker, suggested a proper feeding time at 15:00 or 16:00 before hunting day if a hunting excursion is scheduled in the early morning. When hunting excursion is scheduled around 12:00 o'clock or later, her feed has to be given after hunting. He also stated that fine dog's flesh was incomparably ideal for hawk's digestion and nutritional balance [Campbell 1773:167-168]. A dog flesh consumption was seen at S-22's reclaiming not as usual feed, but as supplementary feed due to a lack of normal flesh although it is a positive coincidence in

terms of nutritional intake. In order to stipulate hawk's appetite, two different types of meat were recommended to serve at the same time from medieval times [Cox 1686: 80-81]. Especially for young hawks, feeding flesh served with raw eggs twice or thrice in a week should be the best to grow strong feathers [Sebright 1826: 7; Freeman & Salvin 1859: 88]. A fresh raw beef is considered as the best food for hawks to keep hawk's body warm after feeding [Sebright 1826: 54]. Then, the master need to "gorge" every 4 - 5 days to keep their bird's condition better [Hamilton 1860: 287]. In addition to a minor difference, European falconers often gave small pieces of meat after hood on for training purpose [Sebright 1826: 36], although Altaic Kazakh falconers feed without hood on.

Same as in Goshawks, hunger is the only inducement to lead Golden Eagles to motivated actions, and they become almost motionless when their hunger is satisfied [Sebright 1826: 53]. Unlike medieval European falconry books "*De Arte Venandi cum Avibus (The Art of Falconry)* (1240's)" by Frederick II of Hohenstaufen, the Holy Roman Emperor, 1194-1250, or "*Boke of Saint Alban* (1486)" (by Dame Juliana Berners), which created a set of various rules and regulations for the strict procedures in taming process, such a strict procedure is only seen in feeding during winter time in contemporary Altaic Kazakh falconers, and they do not really pay a lot of attention and care during summer time due to husbandry work load as stated in the previous chapter. Some sophisticated feeding manners, such as a mixture of meats, eggs, a proper feed timing, etc., suggested by European falconers, are not seen in their feeding manners. However historically speaking, the local custom that falconers gave fox-flesh in winter and then almost full gorge with every livestock meat in summer have well functioned to keep eagles in better condition. Consequently, a strict feeding manner is important during hunting on season in winter. The relatively rough care during summer allows herders to concentrate on animal husbandry work in summertime. Such a seasonal workload sharing between summer (husbandry work) and winter (falconry work) is therefore considered as one of the reasons that sustained centuries-lasting continuation of falconry in local communities.

(5) Training: The training standard of hunting birds is differentiated substantially depending on the type of targets and hunting landscape. But in any cases suggested in hawking guides, a common minimum requirement is smooth communication to let the bird jump on the master's fist and to call off anytime successfully (concretely described in Michell [1900: 87-100]). All young hawks in Britain need to be ready to "enter" before the 1st of September and generally by the 12th of August [Freeman 1869: 22]. Traditionally in Altai Kazakhs, hunting eagles need to be *sharp set* until 20th October (3rd week of October in broad sense after completion of seasonal mobility to winter pasture). However, a daily training is rare nowadays and was scarcely observed during research term because of a decline of hunting activity [detailed in Chapter 5].

4.7.2. Reclaiming Features not Common in Altaic Kazakhs

(1) Hack: The “hacking” was one of the most well-seen procedures in the British falconry both for initial stage for taming, and for final process to release her back to wild. In this way, falconers let birds free to come and go between nature and shelter (mew) at home where only feed is prepared. This custom renders a hunting bird in a half-captive mode with bridging an affiliation both to nature and human sphere. This custom is totally unknown in Altaic Kazakhs neither in contemporary practice nor in old days. In the Altaic Kazakh way of initial contact with a captive eagle, a captured haggard eagle was put on the separate place from the home until she gets used to eat feed from the master. This intermediate term may nearly correspond to the European idea of hack in Altaic Kazakhs.

(2) Bathing: In British falconry, a bathing opportunity has to be provided for all kinds of hawks, especially for eyas almost every day [Freeman & Salvin 1859: 88; Freeman 1869: 44]. Bathing will keep bird’s body and feathers clean and reduce risks of morbidity and disease infection. In addition, Dutch falconers drenched their birds in every morning in order to stand hunting birds quiet effectively, and then perch on the fist until she is dry [Sebright 1826: 13]. A wet bird will get some uncomfortable weight with her soaked body and probably result in stillness. Eagle’s bathing is hardly seen in Altaic Kazakhs. But, S-07 and S-22 provided water in a huge tub aside of their eagles. She sometimes got into the water spontaneously under the hot weather in summer, observed at S-07 by chance (Figure 41: 1). Bathing for eagles also seems to be as effective as in hawks. According to a chance observation, S-22 very roughly splashed cold water on his eagles (Figure 41: 2) even though quite uncommon. Traditionally, hunting eagles are put nearby riverside. This perch may provide an opportunity for spontaneous bathing; it is occasionally observed that some eagles get into the water at shallow places.

1. Spontaneous bathing observed at S-07

2. Uncommon rough splash done by S-22

Figure 41. Bathing of hunting Golden Eagles in Western Mongolia.

(3) Surgical Treatment: In general, surgical treatment and operation is uncommon in contemporary Altaic Kazakhs. One of most common treatments "***imping***" (= transplant a new feather to mend where broken) has not been encountered probably because of less hunting opportunities. Likewise, eagle masters do not apply "***sealing***" eagle's eyes (= sewing the lower eyelids and draw with thread to cast her into darkness), well-known as the Arab way of initial treatment but not done any more in Europe for reasons of animal welfare. Such a sealing technique has been done in China during the Tang Dynasty [Shafer 1958: 315]. One unique treatment by the eagle master is an artificial iron-made talon called "***jez tuyak*** (жез тыяқ)". It was used for eagles which lost their talon by fox-bite, accident or disease. During the survey in Sagsai, eagles possessed by S-05 and S-06 lost one of their talons. These two eagles lost their talons not by the hunting or by fox bite in hunting activity, but by accident in the nature before captivity. A haggard eagle trapped by T-08 also had lost her left talons. These 3 cases suggest that wild eagles might often lose their talon accidentally. The little knowledge about surgical treatments in contemporary Altaic Kazakhs may be seen as a loss of TAK in the process of modernization.

4.7.3. Some Interpretations of Local Falconry Equipment

Various kinds of falconry equipment have been created in Altaic Kazakh community. Some of them were independently developed in the long history of the master-eagle interactive tradition and well reflect an indigenous way of taming process. One unique equipment is an arm brace (*baldak*) and a drinking tube (*tutuk*) which is only devised by eagle masters. Especially, the eagle masters would not use some "tethering equipment" to prevent escape or stray at the field. Whereas **bells** (with "**bewit**" = short straps tied with bells), which normally are attached on the bird's legs as an identification, are inevitably provided in European and Arab falconry, they are uncommon in Altaic Kazakh falconry. It is considered that eagle falconry is operated only at the open range land and mountain foothills. Eventually, the masters would less frequently lose sight of their eagle in the field. Likewise, "**vervel**" (= a metal ring attached at the terminal of jesses for an identification, normally bearing the bird owner's name or coat of arms) are also not in use. Similarly "**creance**" (= a long leash or a tethering cord used to prevent escape of a raptor during training flights) are never seen. Thus, the eagle masters seem not to be afraid of escape from home or stray/ loss at the hunting field. It may also imply an unbroken bond based on close rapport-making between the master and Golden Eagle.

As to a material utility for equipment production, Campbell [1773: 130] suggested that well-tanned dog skin, especially coated with alum, was the best leather material for all falconry equipment. This idea was also supported by several successor falconers later; especially jesses and leash needed to be produced with hound's skin as the primary material [Freeman & Salvin 1859: 56; Cox 1899: 246], and they recommended a calf and kip skin as secondary,

followed thirdly by porpoise (dolphin) hide and white whale skin. In Altaic Kazakhs, materials for equipment making are mostly collected from daily slaughtered goats and cattle. One of the most preferable wooden materials is timber of birch tree which is considered as the most elastic against hard use. All kind of timber materials are precious and difficult to obtain in Sagsai due to the fact that they are collected mainly from summer pastures of the western-most territory of Bayan Ulgii Province. Remarkably, various kinds of falconry equipment have been an essential stage for local artistic expression and craftsmanship. A decoration on the hood (*tomoga*) and arm brace is sometimes elaborately adorned for primp and preen. Besides, deer antler, and ibex horn is a precious material just only used for falconry equipment production, not for bridle, saddle, and any other house commodities in a local sense. Moreover, ornamental embroidery on the gantlet (*bialai*) and feeding pouch (*jem karta*) is created in cooperation with handcraft by local lady or housewives. They reuse or rearrange old traditional tapestry "***tus kiiz*** (тұс киіз)" hanged on the inside wall of the yurt. Silver rivets ornamented on the hood, jess, and arm brace also represent a huge variety of design and pattern that used to identify the specific region and craftsmen in old days.

Analysing the set of local falconry equipment is extremely important not only for a falconry practice which reflects indigenous manners, but also for understanding artistic expression and local craftsmanship. This unique material culture will contribute not only to emphasize the uniqueness of Altaic Kazakh falconry, but also to define lasting contacts between the master and Golden Eagles from the perspective of Human and Animal Interaction (HAI). In both senses, falconry equipment of Altaic Kazakhs is regarded as an irreplaceable cultural resource in the local context.

4.7.4. Wide Range Accessibility for Eagle Falconry

It is well-known that the practice of and participation in falconry culture was severely regulated with social constitution and a legal agenda, established mainly by the aristocratic stratum in medieval Persia, China, Japan, and in most of the European kingdoms. Various kinds of constraints and legalized restrictions against free participation always raised the status of the falconry activity up to the most prestigious stage in the society. Historically speaking, the elite and aristocrats often intended to demarcate a series of falconry activity and related resources from the secular world, as if to privatize the culture itself. This particular socio-political interference into the cultural domain of falconry substantially differentiated the entire atmosphere of raptor-ownership from any other kind of game sport or athletic activities in the medieval world. For example, the origin of the British falconry is considered to begin in the 6th century [Hamilton 1860: 172-173]. The medieval British falconry represented a typical one-side control of falconry activity which tended to regulate participation and control of hunting resources as well as fixing social hierarchy relevant with respect to raptor species. In

medieval Britain, almost each stratum held its own type of birds; such as, "*to a king belonged the gerfalcon; to a prince, the falcon gentle; to an earl, the peregrine; to a lady, the merlin; to a young squire, the hobby; while a yeoman carried a goshawk; a priest, a sparrow hawk; and a knave, or servant, a kestrel*" [Harting 1871: 49]. Such a raptor-ranked social hierarchy was taken over from the time before Shakespeare period. No one below yeoman had any right to hold their own falcon, except those who served better [Bergstrom 1939: 686]. Especially, eyrie or potential prey games and animals of hawks and falcons were strictly protected by laws. Violations of the rule were severely punished. In the 34th of Edward III, felony and severe confinement were also tasked if hawks or their eggs were stolen and this legal constitution was continued until the reign of Queen Elizabeth. After 1540, theft of hawk's eggs or juvenile bird from their eyrie, or to fail to return a lost hawk was tasked to repent their death [Bergstrom 1939: 686]. Hawk thieves were even imprisoned until their death at worst case. Parliament in 1603-1604 allowed the shooting of small birds for hawk's diet for the first time. The British falconry was an integral part of the patronage system in medieval British court, and even provided a cover for espionage and for Jesuit missionaries [Grassby 1997: 42-43]. There is a similar constitution recorded in the Liao Dynasty of China (10th century). Especially, several falconry branches and schools had been established during the Tokugawa Shogunate of Japan (1600 - 1868) although they were disappearing in the process of modernization since the end of 19th century. The decline of Japanese hawking had already been announced among the European hawkers by Harting [1891: 216] in "*Bibliotheca accipitraria* (1891)", the compilation of worldwide itinerary of falconry books. The falconry culture shows a unique conformity (legal restriction, resource control, limited participation, affiliation to social hierarchy) across the Eurasian-wide expansion of cultural sphere, especially across the sedentary world. At the same time, falconry activities always highly depended on the socio-financial status of those who could manage huge expenditure for raptor-ownership and hunting excursion. It may be able to define this as "the sedentary falconry" which is characterized as social institution.

In sharp contrast to "the sedentary falconry", ethnographic studies of the eagle masters in western Mongolia confirmed that there is an absence of socio-legal regulations to limit participation in eagle ownership and hunting activity. According to the Kazakh masculinity, participation in eagle ownership and fox-hunting used to be indeed one of the initiations into adulthood. Therefore, anybody can become a falconer without elite-made regulations, any stratum restriction and national institutionalization. Local Kazakh youth can obtain own Golden Eagle regardless of whether they belong to the elite or not. According to interview-based research, 12 eagle masters (25.5% of n=47) started to hold own eagle by themselves (Table 1). The other masters belonged to the falconer linage at least from their father's generation which should have been an advantage to initialize eagle ownership. However, arts and techniques of falconry are widely permeated into the local society, and shared with community members, elders, even some falconer's wives and children. For an instance, S-22 was

learning TAK from S-11 (his uncle: father's younger brother). S-11 also started to join in eagle taming and hunting by himself in cooperation with other masters around his neighborhood. Similarly, one of the eldest masters, T-01 (90 yrs-old) in Tolbo County started eagle ownership (around 1952) without TAK exchange based on the father-son linage system. This means that the self-education in eagle taming and participation in hunting was not uncommon even 60 years ago. T-01 and T-03 stated that they could learn TAK of falconry from their neighbor masters easily, through daily observation, training assistance, otherwise spontaneous participation in hunting as a beater. Nevertheless most of the falconers (74.5%) learned basic taming arts and hunting techniques from their fathers, but TAK was neither a form of secret techniques nor hidden arts with limited transmission. Rather, TAK of falconry practice is extensively shared among local herdsmen as a social property in their own cultural domain.

In comparison to world-wide falconry context, the absence of elite-made restrictions and social institutionalisation should be one of cultural distinctions of nomadic pastoralist society which is completely opposite from any other falconry format in Europe and East Asia. Particularly, easy accessibility to falconry culture should have encouraged all people without distinction of rank towards eagle ownership and hunting practice. Kazakh eagle masters foster a sense of own cultural proprietorship as a social property among local animal herders. It is one of significant reasons to articulately explain the century-lasting tradition of eagle falconry across the Altai Mountains. Such a circumstance surrounding Altaic Kazakh falconry is very implicative to push cultural sustainability of world-wide falconry tradition forward. Namely, no matter whether freely accessible or restricted to the social stratum, the falconry culture itself needs to be established as a "social property" in the local community with some particular driving forces such as a strong bond in local cultural domains, national-royal institutionlisation, preservative actions, ethnic identity, and so on. Ethnographic research in this chapter clarified that the principle driving forces of continuation of falconry in Altaic Kazakhs are (1) an absence of socio-legal regulation for participation, (2) widely shared TAK of falconry. The unique social basis of Altaic Kazakh falconry illustrates a distinctive socio-historical idea of how falconry has been efficiently preserved by ordinary people who belong neither to the aristocratic elite stratum nor to the sedentary society.

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5. Eagle Falconers in Hunting Operation

Contemporary Operations of Horse-Riding Falconry and its Decline

5.1. Introduction

Decline of Hunting Operation in Current Falconry

Altaic Kazakh falconry still has some unbroken ties with “actual hunting” in the context of the transhumant livelihood strategy. More specifically, it is distinguishable from the contemporary sport or trophy falconry framework — the primary purposes of which are recreation, trophy, sport, and entertainment. The primary hunting quarry are Red Fox (*Vulpes vulpes*) and Corsac Fox (*Vulpes corsac*) in order to obtain fox fur, which is one of the essential materials for winter clothes and ethnic clothes and the making of head gear. In the past, animal fur was used as a precious gift for ritual and ceremonial purposes. Fox hunting by Kyrgyz or Kazakh falconers was not well known by Europeans in the middle of the 19th century. For example, in the explanation of an article “Falconry” in *Encyclopaedia Britannica* (9th edition), Emilius Delmé Radcliffe, the chief writer, was suspected of such a capability of the Golden Eagle and customary [Radcliffe 1890]. Later, the fact appears to have been generally accepted by North American researchers that Golden Eagle preys on fox as a common diet for hunting until the 1950’s [Hock 1952]. It is reasonable to consider eagle falconry as “fox-hunting” in herder’s living context during winter. In this sense, local Kazakhs have a special awareness and attachment to foxes. Eagle falconry culture is deeply anchored in the socio-cultural context of Altaic Kazakhs as an additive subsistence, winter entertainment, and ethnic symbol.

There are many prey animals besides foxes that are targeted by the Golden Eagle, such as rodents, the Maskrat (*Ondatora zibethicus*), rabbits, and hares. However, the Golden Eagle is normally slow in its initial flight and in small turns. Therefore in traditional sense, local eagle falconers do not really intend them for hunting small animals, which they sometimes hardly chase. In the past, falconers also occasionally hunted beaver (құндыз: *Castor fiber*) and Altai snowcock (ұлар: *Tetraogallus altaicus*), although these animals are now nearly extinct. Falconers unanimously argue that hunting eagles could hunt large kinds of herbivores, like argali (*Ovis ammon*) and Siberian ibex (*Capra sibirica*). However, it is almost unable to observe such a large-sized quarry in actual hunting activity in nowadays. Game birds are not used for local hunting targets by falconers. In research observations, hunting eagles by S-22 caught a Pallas’s Cat (*Otocolobus manul*) (Figure 42: 1) and a Eurasian eagle owl (*Bubo bubo*) as occasional quarries (Figure 42: 2).

1. Pallas's Cat (*Otocolobus manul*)

2. Eurasian Eagle Owl (*Bubo bubo*)

Figure 42. Some occasional quarries in Golden Eagle Hunting in Western Mongolia.

Hunting is often begun in the fourth week of September in the case of enthusiastic falconers; however, for more ordinary hunters, hunting commonly begins around 20th October, after the completion of the seasonal move to winter pasture. According to legal regulations, foxes may be hunted beginning on 20th October. The latter half of November, when snowfall day, called "***kansonar*** (қансонар)", is expected, is particularly well-suited for hunting. However, in recent times, hunting has declined. It eventually got to the point where most eagle masters would not go hunting even one day in winter. Some young falconers would not have any hunting experience. Now only two hunters go hunting at least once a week — S-11 and S-22. In fact, some falconers such as S-09, S-10, and S-15 spent several hunting days trapping or shooting. Thus, hunting with eagles has almost disappeared in contemporary Altaic Kazakh falconry.

5.2. Subjects and Methods

In this section, an ethnographic record of the hunting operation "***sayachiluk*** (саятшылық)" is documented with participant observation of S-11 and S-22. These two falconers are related as uncle and nephew. The young falconer, S-22 has learned taming and hunting skills from S-11. This research was carried out from 20th November 2011 to 26th January 2012 (60 days), and the author mainly lived together with the informant family at Buteu Winter Pasture (BWP). In this time period, S-11 and S-22 spent ten hunting days in the Agjal (Агжал) Mountains, where one of the traditional hunting fields situated in the north of the Sagsai territory (Figure 43: 1) is found. However, there were no hunting days from 10th December 2011 to 15th January 2012 (36 days) because S-22 got involved in a traffic accident with his motorcycle and needed

Table 4. A hunting log at the Agjal Mountain in Western Mongolia.

Hunting Days (n= 10 days)	Duration				Falconer	Beater	Encounter			Flight	Weather	Mobility	
	Start	End	Total (min)	Actual* (hour)			Foxes	Point	Capture			Avarage (km/h)	Distance (km)
2011. 11. 26 (Sat)	10:11	13:52	144	2.5	S-22	no	1**	$_{HP}$.B		1	Clear	1.5	5.9
11. 27 (Sun)	11:01	16:48	328	4.0	S-11 / S-22	S-21	1	$_{HP}$.F		S-11 x1 / S-22 x1	Clear	2.0	14.3
11. 28 (Mon)	10:35	17:26	391	6.5	S-22	S-11				2	Clear	3.0	18.9
12. 01 (Thu)	10:39	16:27	329	6.0	S-22	S-11	1	$_{HP}$.E	1	1	Clear	2.0	14.8
12. 03 (Sat)	10:30	17:00	390	6.0	S-11 / S-22	S-21					Cloudy	(no record)	
12. 04 (Sun)	11:10	17:51	320	5.5	S-22	S-21	2	$_{HP}$.I		3	Clear	2.0	15.6
2012. 01. 17 (Mon)	11:30	15:30	240	2.5	S-22	no	3	$_{HP}$.F		4	Cloudy	(no record)	
01. 18 (Tue)	11:30	16:30	300	3.5	S-11 / S-22	S-21					Clear	(no record)	
01. 20 (Fri)	12:00	15:30	210	3.0	S-11 / S-22	S-21	1	$_{HP}$.H		S-11 x2 / S-22 x1	Clear	(no record)	
01. 21 (Sat)	10:00	13:00	180	2.5	S-22	no					Little snow	(no record)	

* Actual spent times in hunting field

* A rabbit

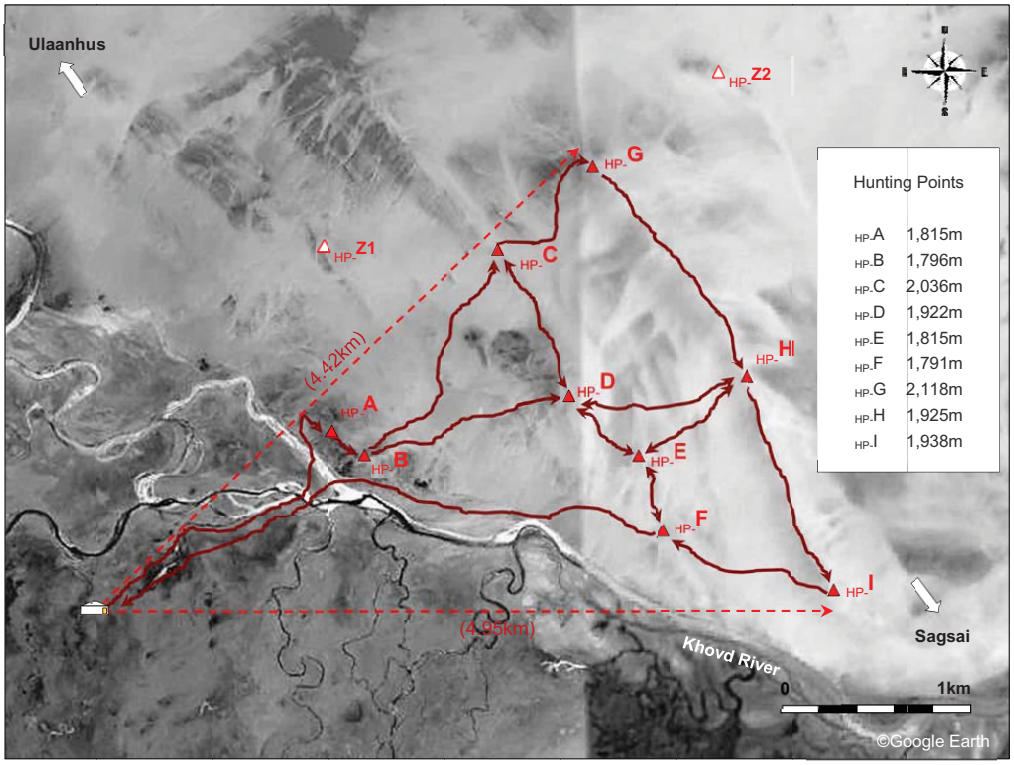
a rest to heal his left leg. Therefore, along with the original schedule, S-11 and S-22 spent a total of 20 days hunting.

Observations were carried out by participation in all of the hunting days and recorded in the hunting logs for behavioural analyses (Table 4). During the hunting term, S-11 was accompanied by one 11 year-old eagle and S-22 was accompanied by one 6 year-old eagle. In this documentation, hunting duration, method, place, route, the encounter ratio with quarry, and captures are recorded based on the hunting log. Geographical information for this study (altitude, duration time, place, distance) was recorded with GPS map60$_{CSx}$ by Garmin Ltd. product, and later processed with BaseCamp^{TM} and Google Earth^{TM}. Then, indigenous traits and cultural format observed during the actual hunting operations are described together with several alterations and potential reasons for recent decline. This section is meant to provide a basic idea of a master plan to sustain hunting activities in the current context of eagle falconry as a major part of the cultural preservation.

5.3. Results

5.3.1. The Hunting Field: Agjal Mountains in Sagsai County

There are mainly three hunting fields surrounding the Sagsai territory: Kara-Yurok (қара үйрек), Kogula-Tube (қоғыла төбе), and Agjal. It is recognised that eagle falconers in Sagsai used to use the Agjal Mountains for their frequent hunting activities. There are nine hunting points (from $_{HP}$.A - $_{HP}$.I) which are situated on the summit or hill top for an easy overview of the foothill. The Agjal Mountains extend around the north bank of Khovd River in the northern territory of Sagsai. There are many isolated heaps and hills shaped by ancient geological upheaval and orogenic movement. No trees grow in the mountains, and vegetation is extremely scarce. The surface of the mountains is covered with rocks and stones which



1. Hunting routes and points in the Agjal Mountains

2. The Agjal Mountains from the south

3. Nearby HP-G - HP-H from the west

Figure 43. An overview of the Agjal Mountains of Western Mongolia.

provide nesting and hiding places for small and medium-sized animals. There are several points which consist of ancient sea sand, such as a desert from the ridgeline to the northern foothill. Therefore, trail walking both on foot and horseback is extremely difficult in terms of geomorphological traits.

The mountains look like they are sharply undulating from the ground. The sequence of hills and heaps is extended to the east and west. The highest point of this hunting mountain is

2,118 m ($_{HP}$-G). The difference in elevation between the top and foothill is more than 200 m, and the maximum inclination is over 50 degrees. Therefore, there is great overview from the top of mountains. In addition, falconers are able to get there within 30 minutes from the Sum centre and BWP. Because of its accessible location and geomorphologic traits, the Agjal Mountains have been used as an ideal hunting range for many years.

5.3.2. Hunting Days and their Duration

It is said that in the past eagle falconers went hunting almost every day. Hunting was also carried out during daily grazing activities in the mountains. In many cases, hunters would spend ten hours hunting. However, in Altai regions, the sunrise is at about 7:00 and the sunset is at about 18:40 on the 1st of October. Afterward, the daytime becomes shorter and shorter, for about one minute per day. On the day of the winter solstice (21st December), the sunrise is at about 8:50 and the sunset is at about 17:05 (data referred from GPS map60$_{CSx}$).

In addition, hunting is a serious physical burden for a riding horse. Hunting frequency should be once in two or three days in general if only one horse is used for hunting. In that case, the continuous duty of the horse should be demanded for 3 - 4 days a week at maximum. Likewise, only strong and well-conditioned hawks can fly two consecutive days [Hamilton 1860: 287]. Normally, hawks fly for hunting every other day to avoid overloading. In addition, cloudy, snowy, and extremely cold days are regarded as unsuitable because foxes would not leave their nests to search for food. Extremely windy days are also avoided because the Golden Eagle cannot stabilise her soaring up to the “pitch” (= the highest point) before stooping to a fierce attack on the quarry. Furthermore, ceremonial, ritual, and seasonal meeting days need to be taken into consideration. Some Kyrgyz and Kazakh falconers are said to avoid hunting on Friday in connection to the Islamic holiday. In sum, actual hunting days in winter should not be more than 60 days at maximum, as in the past, and in general should last for 20 – 40 days (within 150 days from 1st October to 28th February). The best condition for hunting is after a snowfall and with a little snow covering the surface of the mountain. This is because under such conditions the figure of a fox is very well recognised from the top of mountains by falconers and from the sky by companion eagles, improving the success ratio for capture. Snow cover also provides chances to trace animal footprints on the surface. Snow cover would not be expected often in a winter due to strong winds that blow it away. Such well-conditioned days were observed on only 9 days during the research term.

According to the hunting log, hunting operation is not very active from early morning. It normally starts at 10:30 – 11:00. Additionally, hunters would not stay in the hunting field later than 16:00. In this documentation, hunting would not take place for more than six hours. Tamed hunting eagles have a unique tendency to sleep until late morning — even as late as 10:00 and after people start to work loudly nearby. Even in a natural state, eagles are often

lethargic in the morning and inactive until noon. In the case of young Golden Eagles on the Spanish peninsula, the peak of activity is from 13:00 – 16:00 [Soutullo, Urios, & Ferrer 2006: 69-72]. This may be related to the rise of temperature and an upward current. In this observation, 64% of flight distance from the nest in 1 hour was within 1 km, 95% was within 9 km, and an average flight distance was 14 km (0.1 km as minimum/ 53.2 km as maximum). This fact seems to coincide with the folk knowledge of British falconers that Golden Eagles do not fly by their own will [Ford 1982: 119]. This also fits the customary behaviour of contemporary Altaic Kazakh falconers, who regulate the starting time of hunting operations. From my personal experience, the sunset time is much earlier because of the mountains surrounding the Sagsai territory. Therefore, taking into account the night vision of the Golden Eagle, maximum hunting duration is seven to eight hours in a day.

5.3.3. Hunting Routes and Points

There are several routes and points during a round excursion in the hunting field. According to observations, there are nine hunting points ($_{HP}$A – $_{HP}$I) and the basic hunting route is defined as links between each hunting point (based on Figure 43: 2 – 3). This is only a basic route. Thus, the order of each point and route depends on the situation and encounters with animals. Daily conditions such as the discovery of footprints or burrows and wind direction are also factors that dictate hunting behaviour. For example, if hunters could not get a chance or encounter at any points or ridgelines, they start to seek a quarry randomly rather than depending on the route.

The minimum hunting point is on the top of a ridgeline or hill, which provide a nice open view toward the foothill. A hill top point, where falconers can get an overview both of the north and south foothill seems to be a perfect location for prey searching. Unlike falcons and hawks, "***raking***" (= to catch the quarry in the air) will never be expected in eagle falconry. It means the prey is always situated underneath the eagle and the master. In the Agjal Mountains, foxes and rodents nest in the surface of the northern foothill, where it is much colder and darker than the southern foothill. Consequently, trace hunting was carried out mostly in the northern surface of the mountain. However, falconers basically fly their eagles toward the southern surface and foothill. One of the reasons for this is due to the fact that they fly their eagles toward the upper windward current. In this hunting place, the wind always blows either from south to north or west to east. It is well known in British falconry that the master will fly his hunting bird towards the upper windward current. A British proverb tells that "If you fly your hawk toward downwind (leeward) current, it will never be coming back to fly away on the wing". This saying often stands out as a "final farewell" with a bird in its connotation [Harting 1993 (1864): 68]. The Agjal Mountains have a huge and open southern foothill and high altitude disparity between the top and bottom rather than the northern part. This topographical feature catches the northbound wind from the direction of BWP. In addition, there are frequent upward

1. HP-A - HP-B

2. HP-B

3. HP-C

4. HP-D

5. HP-E

6. HP-F

Figure 44. Hunting operation in the Agjal Mountains of Western Mongolia.

currents due to sunshine warming the air. It is a very important condition when hunting eagles fly into the sky for soaring. When the hunting eagle feels a wind current on her body she has a habit of expanding her wings with a forwarding posture. Therefore, flight to a headwind is unavoidable in hunting when considering the heavy weight and slow initial flight of the Golden Eagle.

In a basic hunting operation, falconers are accompanied by some beaters called "***kagush*** (қағушы)".

(1) They initially visited HP-A from the western corner of the Agjal Mountains. Then they visited

7. HP-G

8. HP-G view from HP-H

9. HP-H

10. HP-I

Figure 44. Hunting operation in the Agjal Mountains of Western Mongolia.

HP-B at the top of a small hill situated at the north bank of the Khovd River. In advance, a falconer climbed to HP-B while the beater stood directly beneath HP-A. Then the beater moved underneath HP-B. The falconer on the top of the hill also gradually moved toward HP-B in parallel with the beater at the foothill (Figure 44: 1 – 2). If some signs of hiding animals were expected, they searched insistently on the way several times. HP-A and HP-B are situated on the ridgeline of an independent hillock, which extends 880 m from the east-west, 310 m from the north-south, and is 53 m high from the river bank. Thus, falconers on the top could get a nice overview of both the south and north foothills.

(2) When they could not find any quarry or harvest, they moved to HP-C, HP-D, HP-E, or occasionally to HP-F (Figure 44: 3 – 6). Hunters once went down to the basin in between and climbed again to the hunting points. They also looked for footprints, and if they recognised them on the snow cover on the way they tried to trace them back to detect a burrow hole of animal. In particular, HP-E and HP-F have complicated topographic features with various small-scale ridgelines and valleys created by ancient folds of soil layers. As a result, encounters with prey animals were the most frequent around these points.

(3) When searching for prey at these points ends, hunters often climb up to HP-G (Figure 44: 7 – 8) where the highest elevation in the Agjal Mountains is located (2,118 m altitude). This point is regarded as a good location and provides a sweeping view of most of the foothills. On each

hunting point or meanwhile prey-searching, hunters very frequently whistled to make a same scale sounds nearby eagle's head. This sound seems to be too soft to expel prey. Some hunter said whistling drives the eagle's aggression with its sound. Nevertheless, the physiological effects are unclear; it may have some conditioning effects in which sound becomes a signal always made before attack. A particular sound and eagle's temper for aggression seem to be closely associated. For instance, drum sounds were used for calling off training during medieval Arab falconry [Clark 2004: 52].

(4) Afterward, the hunters moved eastward to $_{HP}$-H and $_{HP}$-I (Figure 44: 9 – 10) along the highest ridgeline. Hunters often go down to visit $_{HP}$-E and $_{HP}$-F again from $_{HP}$-H. Meanwhile, the beater normally left at the lower foothill of each point ($_{HP}$-G, $_{HP}$-H, and $_{HP}$-I) and moved eastward in parallel with the falconers on the highest ridgeline. Sometimes the beater came to join on the top of mountains to grasp the overall situation, and then he went to visit the foothill alone. Otherwise, the hunters moved from the ridgeline ($_{HP}$-G, and $_{HP}$-H) to traverse the northern surface to search for quarry.

In this observation, hunters regularly visited $_{HP}$-A–B, $_{HP}$-E–F, and $_{HP}$-G–H in every hunting operation. There are two irregular points ($_{HP}$-Z1 and $_{HP}$-Z2) visited only once each. However, topographic conditions are similar to other points on the regular hunting route, situated on the hill and providing a nice view of the lower foothill. From $_{HP}$-A to $_{HP}$-G (or $_{HP}$-H) on the regular route, a single excursion distance is $_{approx.}$ 6.4 – 7.8 km and normally about five hours are spent in a single direction. The total distance of a round excursion between $_{HP}$-A and $_{HP}$-I (the most remote point from home) is $_{approx.}$ 20 km. However, more walking distance should have been added due to insistent prey searching on the route between each hunting point.

Additionally, eagle falconry needs to be undertaken in the craggy mountains on horseback. Consequently, mobility is extremely restricted, and hunters cannot effectively move in the hunting field because of the need to climb up and down repeatedly in a short period. The total ascent was 390 m from $_{HP}$-A to $_{HP}$-G, and 450 m from $_{HP}$-A to $_{HP}$-I in elevation. In connection to these restrictions in hunting mobility, the easternmost $_{HP}$-I is 5.7 km in walking distance (4.95 km in direct distance) and the northernmost $_{HP}$-G is 6.1 km in walking distance (4.42 km in direct distance). On occasion, hunters visit the northernmost part of the hunting mountain. However, it takes more than one hour, and the hunting duration thus is inevitably shortened. In addition, the northern part is much colder than the regular route, so the encounter rate with foxes would not be high. Thus, hunting duration and distance would not be extended for reasons of restriction of mobility, saving hunting time, the short daytime, and the eagle's visibility in darkness. The sphere of daily hunting activity should have been within 4.0 – 6.0 km direct distance from home.

5.3.4. Cooperation with Beaters in Hunting Operation

In general, hunting operations are not carried out alone in Altaic Kazakh's style. Hunting excursion is inevitably done in cooperation with a beater(s). I had no chance to observe a single falconer alone in the hunting field during the 2011/2012 season. In the old days, a hunting party consisted of three to five falconers with beaters — and possibly even more members — who visited the hunting field as a group. If the initial attack on the prey failed ("***fly on head***" = unsuccessful attack), a second eagle would be released to attack the prey. When the second attack was also unsuccessful, a third eagle was released. This plural pursuit by hunting birds is known as "***check***" (= to leave the bird flown at for another prey) among British falconers such as at magpie hawking at Valkenswaard in Holland [Sebright 1826: 27-28]. According to old convention, multiple eagles chase one prey to maximise utility of scarce chance of encounters to raise the success ratio. Actions of such a hunting party are more effective and prevent a failed chasing in hunting. More than one member of the hunting companions needs to be a beater in hunting excursion. In fact, the beater need not be a falconer or eagle owner. Therefore, anyone could potentially become a beater, such as family members, friends, or neighbours. However, the role of beater is very important and requires decision-making in the operation. For this reason, experienced falconers often take this role on themselves.

According to the most common way of hunting, falconers move to the top of the hill or ridgeline while beaters stand by at the lower foothill. When the beater is assured of the falconer's arrival at the top, he starts searching for prey by shouting and making loud sounds by hitting his saddle with his whip. Lees and niches behind of rocks are browsed thoroughly to expel preys that are hiding. The beater designates a timing of his next movements such as proceed, return, stop, etc., with signs to the falconer in accordance with his own action. In the meantime, the falconer strains his eyes to search for prey. As he recognises the figure of an animal, he immediately flies his eagle toward the prey. In every hunting point, the falconer and beater are separated toward the top of the ridgeline and lower foothill and they proceed in parallel in the same direction. In the case of more than two beaters joining in the hunt, they stand at different elevations to make a vertical line to the ridgeline. Then they traverse the surface of the foothill together. Likewise, falconers also stand by at some intervals on the ridgeline if there are multiple participants. When the beater discovers quarry he starts chasing it and shouting to disturb its action and drive it into a small hole or niche.

As is recorded in the hunting log, if no beater could participate in hunting with S-11 and S-22, the elder, more experienced falconer, S-11, regularly took on the role of the beater. He released his eagle on the ridgeline and then traversed the foothill alone several times. S-22 obeyed instructions from S-11 at lower part of the hill. In this sense, the primary beater can be considered the brain in the hunting trip by governing the hunting harvest. Therefore, in the local falconer's rule, the first harvest (mostly fox) will belong to the initial beater as a reward. In

the case of only a one-fox harvest, the falconer who gets a fox has a right only to the set of front leg fur — the "***pushpak***" (пұшпақ) (crucial for making a traditional Kazakh hat). If there is a second harvest in a day, or on another day with the same members, the harvest will belong to the falconer who initially caught the prey. The beater's priority of initial harvest should highlight his significant position in the hunting operation of Altaic Kazakh falconers.

As already noted, some very experienced falconers did not need the assistance of a beater (according to T-03, S-11, S-22). S-11 went hunting alone with only a well-trained eagle. At the peak of hunting point, the master let his eagle soar alone and then climbed down to the foothill to flush quarries as a beater. As the eagle soaring in the sky detects the quarry, she will stoop down without any command from her master. On 28th November S-11 flew his eagle alone to let her detect a quarry by herself, and then he kept searching for prey alone at the foothill of $_{HP\text{-}}$G, but a quarry never appeared. His eagle would not come back to him for nearly an hour.

Nevertheless local falconers and discipline stressed on importance of the primary beater, they could very rarely succeed in expelling animals without his action. During observations, a successful expulsion by a beater occurred only one day on 4th December at $_{HP\text{-}}$I. Instead, foxes and rabbits were unexpectedly coming out from behind in normal formations with all hunting participants between hunting points. In such a situation, falconers let their eagles fly towards the prey. The situation also suggests the necessity and effectiveness of a large number of participants in a hunting party.

5.3.5. Contemporary Hunting Style with Diversity

Hunting styles in eagle falconry have become more diversified in recent times. Falconry is understood as the "direct catch" of quarry by a hunting bird. However, the use of hunting eagles has receded in contemporary Altaic Kazakh falconry, and the success ratio of direct catch by hunting eagles seems to be in decline.

(1) Burrow Hunting: One popular method for capturing quarry is "burrow hunting" by hunters themselves. When a prey fox could avoid an eagle's attack and run away, hunters immediately run toward the escaped fox's direction in order to find a burrow or hole "***in*** (ін)" where it escaped into. As hunters discover the hiding place or nest hole, they cover the entrance with stone, sand, or felt. Then, they try to pull the fox out with needled-steel wire that is rendered in a ring shape (Figure 45: 1 – 4). In a sense, hunting eagles are used to specify a fox's burrow to let them escape in the hunting field. Further, if snow covers the field, hunters will trace the footprints of animals for "trace hunting". In the Sagsai territory, snow is expected only for a short term from the end of November to the middle of December. After some falconry operations in each hunting point without harvest, hunters frequently change their method to

trace hunting and start to look for footprints made by foxes. When hunters detect a hiding place, they try to capture the prey themselves by burrow hunting.

1. S-11 and S-22 shut an entrance of the nest hole

2. They forcefully pull out a fox with a needled wire

3. S-22 captured a fox

4. A captured fox in a carrying bag

Figure 45. Capture from a burrow hole in Western Mongolia.

(2) Trap Hunting: Another method is “trap hunting” which is one of the most effective and effortless ways to hunt various kinds of animals that even eagles cannot hunt. In this method, the trap hunter sets up iron traps (Figure 46: 1) nearby a burrow or nest hole and puts a lump of sheep flesh in front of them. After some days, or every single day, the trap hunter goes to visit the trapping site to see if there is a harvest. As was mentioned, two settler falconers (S-10 and S-15) are both well-known and experienced trap hunters in Sagsai (Figure 46: 2). According to observation, they captured various kinds of animals such as grey wolf (*Canis lupus*) (Figure 46: 3), Siberian ibex, Siberian weasel (*Mustela sibirica*) (Figure 46: 4), beech marten (*Martes foina*) (Figure 46: 4), brown rat (*Rattus norvegicus*), deer, and even raptors such as saker falcon (*Falco cherrug*) (Figure 46: 5), black vulture (*Aegypius monachus*), and Golden Eagle. Trap hunting is also not seasonally regulated like eagle falconry. Therefore, trap hunting has replaced eagle falconry to become a dominant method in local hunting activities in western Mongolia, and eagle falconry has become just one of several methods.

1. A common iron trap used by local herdsmen (S-15)

2. Prey foxes trapped by S-10

3. A juvenile wolf trapped by S-09

4. Siberian Weasel (above) and Beech Marten (bottom) trapped by S-10

5. Saker Falcon trapped by S-15

Figure 46. Animals captured by trap hunting in Western Mongolia.

(3) Gun Shooting: Gun shooting is also seen in hunting for feeding purposes. In Sagsai, at least 10 falconers (S-02, S-03, S-04, S-05, S-08, S-09, S-10, S-11, S-13, S-16) keep an Old Russian rifle (TOZ-8) at their home. In fact, S-09, S-10, and S-11 were observed shooting

during the summer time. They also need to pay for bullets, which cost about 1,000 Tugrik for one shot and are obtained from the market at Ulgii or from acquaintances. Normally, both herders and settlers would not keep cash in their homes, so some hunters try to avoid the expense of gun shooting. It is widely thought that gun shooting replaced pre-modern falconry in Britain. A short comparative study between falconry and gun shooting (five hunters and four bird dogs each) in a six-day hunt suggests that hunting with a Goshawk could hunt 9/112 flushed animals (8%), while gun shooting could shoot 40/110 (36%) [Šegrt et al. 2008]. Essentially, gun shooting implicates a 4 - 5 times higher harvest.

However, the recent situation characterised by a decrease of foxes and heavy duty of prey searching let hunters exhausted so that hunting itself is not really entertaining hunting participants with harvest and accomplishment of catch anymore. In fact, the demanding conditions of hunting, such as extreme coldness, galloping on the rocky heaps, and the necessity of continuous concentration on prey searching for 6 - 7 hours in the winter become serious physical burdens even for local herders. The temperature at the top of the Agjal Mountains sometimes goes to below -35°C. Therefore, even beaters often seek payment for their assistance to falconers.

5.4. Discussion

Sustainable Hunting from Contemporary Perspectives

5.4.1. Rethinking the Productivity and Entertainment of Eagle Falconry

In comparison to other falconry cultures such as those in Europe and Japan, Altaic Kazakh falconry has been practiced for a limited purpose. As one characteristic, local eagle falconry is never done on plain open land, steppe fields, forests, or riversides, which are more popular places than mountains in other falconry cultures. This is because eagle falconry intends to hunt foxes as a primary target for the sake of fur acquisition. Therefore, the hunting place is naturally limited to the mountains where foxes dwell. The hunting season is thus also naturally restricted due to the aim of harvesting the foxes' rich winter fur. Fox fur is of primary importance in making Kazakhs' ethnic clothes and hats, in gift exchange, and for occasional trades in the community.

According to observations, an eagle does not fly many times in a day. This is positively related to encounters with prey animals. Eagles did not fly for even three hunting days. A falcon flies ten times in a day if conditions are good [Cox 1686: 30]. Hunting eagles would not have so many occasions to fly for hunt. Unlike dogs, hunting birds are never punished because of missed attacks at hunting. Raptor and human relations should be regarded not like dogs as servants, but as friend or companion [The Lotus Magazine 1915: 27-28].

In addition, analysis from self-provisional supporting, local falconry would not have been dedicated for food security even in old times when falconry culture was more extensively practiced. On the contrary, in modern Europe, particularly in Britain, falconers often hunt more than 100 game birds (or small preys) in a year. British falconers of mediaeval times indulged in hunting for five to six days in a week. This decreased to two to three hunting days in a week in the 19th century [Hamilton 1860: 286-287].

For example, eight falcons possessed by the 9th Duke of Leeds hunted a total of 300 grouses and partridges in 1830. In addition, one outstanding falcon hunted 129 prey in the year 1832 [Salvin & Brodrick 1855: 64]. Further, in Ayrshire in Scotland, an excellent falconer named Peter Ballantine captured 269 game in the season of 1870, and after a year's hunt no less than 346 game were captured with six hawks (this was recorded as the biggest catch of a year in the history of British falconry) [Cox & Lascelles 1899: 269-270]. In 1882, the hawks belonging to the Old Hawking Club hunted 100 brace of grouse on the Achinduich moors in Sutherlandshire from the 12th of August to the 14th of September [Cox & Lascelles 1899: 269-270]. As a further reference data at the hunting place in southwestern Baluchistan (Pakistan), the annual catch of Houbara Bustard (*Chlamydotis undulata*) by 369 falcons was recorded at 4,512 from 1984–1985 [Mian 1986: 41-46]. During the 19th century, Gyrfalcons (*Falco rusticolus*) were used for hunting Red Kite (*Milvus milvus*), and horseback hunters hunted even gazelles with multiple hunting birds [Fuertes 1920: 439; Hamilton 1860: 298]. This is not only a simple comparison, but also suggests that falconry has the potential to be an independent source of provisional subsistence if extensively practiced with a number of birds in frequent hunting operations aimed at serious productivity.

According to one falconer's point of view, if the local Kazakh hunter tries to promote falconry to engage more in provisional productivity in the Altai region, they should tame falcons and hawks such as Saker, Peregrine, or Goshawk, instead of eagles and then they would need to hunt migratory birds, which fly from April to the end of August. The Altai region is one of the biggest destinations for migration of summer birds and waders during summer time. However, in recent centuries falcons and hawks species were not tamed for hunting, and hunting was not practiced in the summertime. Ritual ideas against wild birds need to also be taken into account as an explanation of this phenomenon. For instance, a motif of confronting swans symbolises love and peace in Kazakh's local culture. Additionally, chicken meat would not have been included in Kazakh's food culture. Customary, local herders are not so much interested in bird-based food products, such as chicken and eggs. In addition, the flesh of Altai Snowcock is believed to contain some medical effects, especially for internal diseases. Although the birds motif is well seen in the design of tapestries and embroidery works adorned inside the yurt, local Kazakhs may have some ritual fear or awe against reckless hunt of wild birds.

5.4.2. Hunting Horses for Falconry

Horses are inevitably necessary in hunting. The weight of an adult hunting eagle reaches 6 to 7 kg. It seems to be an extreme physical burden to perch an eagle on the arm and walk like that all day long. Decrease of horse ownership was one of the critical issues degrading hunting operation in Kyrgyz falconry [Soma 2008]. The hunting distance will reach more than 20 km and its total ascent is also calculated at more than 400 m in a day. This becomes an extreme physical burden on the riding horse as well. Consequently, hunters require physical energy and endurance for hunting horses. A large body is also necessary in order to keep a longer stride over rocks and uneven ground in the hunting mountains. However, less experienced horses, and young ones such as 4 – 5 year-old horses very often would not walk or climb up the mountain route. Further, horses are afraid of walking if not wearing horseshoes. Hunters keep proceeding in a line between hunting points and at narrow paths at every climbing point. If uncooperative or showing unstable temper in line galloping with other falconers or beaters, the horse is not talented as hunting horse. In hunting operations, even local hunters often dismount and lead the horse at extreme paths due to the dangers. To train a fine hunting horse, the hunter needs to go on an excursion to hunting routes and points several times to let the horse become aware of the circumstances before hunting season begins. Continued horse ownership in the contemporary Altai region means a critical contribution to sustaining eagle falconry culture. Partridge hawking used to require horse riding in the open space [Sebright 1826: 21]. The 14th century French book, *Le Menagier de Paris (The Goodman of Paris)* (1393) advised that the horse used for hawking should be “low and easy to mount and dismount…, peaceable to ride without frisking or wheeling or pulling on the bridle or kicking and that he stand very quiet and still” [Forsyth 1944: 258].

5.4.3. Fox Hunting for Ethnic Significance

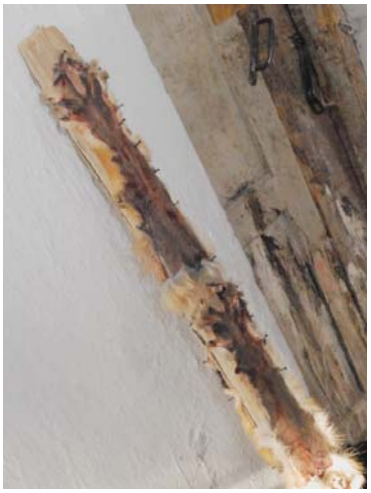
As repeatedly mentioned, the benefits from falconry are limited to the fox fur which is suitable either for exchange or for personal use. Common quarry of falconry such as lagomorph (*Lepus spp.*), rodents, waterfowl, or game birds are not considered to be hunting targets. There are no migratory birds in winter. The primary hunting target is red fox and corsac fox, so that Altaic Kazakh falconry is usually described as a “fox hunting” by its nature. Winter fox hunting has diversified meanings and is significant to a falconer’s livelihood: (1) Fox fur acquisition, (2) Fox flesh for eagle feed, and (3) Symbolic attribute of Kazakh masculinity.

(1) Fox Fur: Red fox is divided into four types depending on its hair color in a local sense: red (қызыл), brown (күрең), yellow (сары), and grey (қогала). This division is not based on

biological definition, but rather on the individual characteristics of each fox. A fox needs to be pelted immediately after being killed. Hunters need to peel off the skin before the body temperature becomes cold. If the body becomes cold, the skin cannot be removed from the flesh easily. Thus, a quick technique is required to skin a fox. The pelt is never washed in this process; rather, salt or yogurt "*airan* (айран)" are pasted on the whole inside of the body. Then the fur is dried either outside or inside for 10 – 14 days (Figure 47: 1). Pasted yogurt becomes hardened and fixed so that it will eventually clean the blood, dust, and hair away. Afterward, the pelt is reversed at a warm place, making it soften. Similarly, leg furs are extended and secured on a board or wood for 7 – 10 days (Figure 47: 2).

Fox fur is reminiscent of some trades and exchanges in the community in former days. However, fox furs are now rarely sold at market or for travelers. In the case of sales to travelers, the average price of a fox fur is 20,000 – 25,000 Tugrik (12 – 15 USD) if the owner is kind enough. Corsac fur is 10,000 – 20,000 Tugrik (6 – 12 USD). Both of these prices are also dependent on the quality of hair, color, and length of the tail. It seems that obtaining fur and trading could be a great economic activity for falconers if there were more systematic sale routes and marketing structures. There are certain structural weaknesses in securing "cash income" from sales and production systems of transhumant animal herding. In summer, sales are mostly carried out for dairy products such as milk, as well as horse milk wine and various meats. However, the quantity and the quality of dairy products decline sharply when winter comes. For instance, in winter each cow produces only 1 litre of milk per day, whereas in summer it is capable of giving 4 times more milk. Furthermore, the majority of the livestock, particularly sheep and goats, lose 1/4 of their weight. The herders frequently face severe shortages of provisions in winter, as well as of cash incomes. In the case of Kyrgyz falconry

1. Fox pelts dried at sunshade (S-10)



2. Fox's leg fur in under (S-07)

Figure 47. Fox fur after pelt in Western Mongolia.

around the Lake Issyk-kul Province, falconry activities have been more engaged in economic opportunities [Soma 2007, 2008]. During the 1950s–70s in the Socialist period, offices of the Hunter's Association were established across the Kyrgyz territory. The offices constantly bought fox and animal pelts and decided their proper price. Therefore, sales of fox fur and fur products secured monetary incomes for herders in winter by providing winter job opportunities.

(2) Dietary Purpose: It is also worth mentioning that fox meat is ideally suited for an eagle's diet in the winter season. The hunter can obtain 2 – 4 kg of flesh and organs with few losses from an adult fox. This amount provides 10 – 14 days of food for a hunting eagle during the winter. A certain amount of fox flesh will contribute to reduce the feeding burden and to reduce diet overlap of human and eagle. It means that fox hunting must be done by all eagle owners. In the case of the capture by S-11 and S-22 on 4th December 2011, the pelt was taken by S-11 and the body was given to S-22. The whole flesh was consumed within seven days. Ten foxes would be desirable to cover feeding expenditures during a winter season. As is suggested in the previous section [Chapter4. Feeding Tasks], falconers never give animal fat or blood to eagles in winter. Fox flesh is also chopped into small pieces and the blood washed off by soaking it in water for hours to "enseam" (diet regulation in order to support the motivation of eagles to fly and hunt). If an eagle eats fat and blood, it loses its aggression to hunt because of its full stomach. Therefore, blood and fat, even tiny parts, are carefully shaved and trimmed off before soaking in water. In general, the fox is full of muscle with little blood and a low fat ratio [Lefebvre et al. 1999: 161-170]. From a nutritional standpoint, fox flesh seems to be ideal for a winter diet. Consequently, fox hunting is one of the requirements of eagle-ownership due to the fact that without it the feeding costs will become an extreme burden.

If fox meat is unavailable, a falconer needs to share his own food with his eagle. A lack of fox meat means a direct threat to a falconer's larder. Thus, captured prey tends to reduce the burden of feeding costs. In practical sense, "to possess a Golden Eagle" means to be an active hunter in terms of continuation of taming and hunting arts.

(3) Symbolic Attribution: Fox hunting has various meanings not only in relation to falconry but also for a falconer's social life in the community. Traditional fox hunting has more symbolic connotations than a practical utility in Kazakh communities. One of the significances is that fox fur is exceptionally important in making Kazakhs' ethnic clothes. For example, "***Pushpak tomak*** (пұшпақ томақ)" (= fox's leg fur hat) (Figure 48: 1) is the most symbolic equipment in Kazakh masculinity. The hat brim is ornamented with 16 – 25 fox' leg furs and some Kazakh elders use more than 30 legs for a hat. Its hemming is also piped with the pelt of Eurasian beaver (*Castor fiber*). According to tradition, only front leg furs are chosen for use. Some elder Kazakhs never use rear leg furs due to their poor condition from daily running and jumping up.

1. S-18 wears his Pushpak Tomak

2. Tulk Tomak

Figure 48. Fox fur products in Western Mongolia.

Just to make one hat requires 8 – 12 fox captures, or even more when only leg fur is sought. This head gear indeed represents interactions between foxes and Altaic Kazakh males. Additionally, "***Tulk tomak*** (түлкі томақ)" (= fox fur hat) (Figure 48: 2) is inevitably necessary during extremely cold winters. Therefore, fox furs are one of the essential materials for making ethnic clothes to represent Kazakh masculinity. Fox hunting gives opportunities not only for fur acquisition, but also for significant self-identification to adorn oneself with elaborate ethnic head gear and clothes. Thus, fox hunting has a more meta-physical meaning beyond the simple context of hunting. This also gives ethnic symbolism to eagle falconry.

In earlier days when hunting was more common, hunters provided meat for their hunting eagles more often from wild game and prey. However, the decline of hunting is increasing the maintenance costs of hunting eagles at a falconer's or eagle owner's home, due to the overlapping of livestock meat consumption between humans and eagles. One critical thing to sustain falconry culture is to keep hunting practice alive even in contemporary contexts. In other words, "to hunt with a Golden Eagle" should have a similar meaning as "to be driven by a Golden Eagle".

5.5. Conclusions

Hunting activities will be mostly finished by the end of February every year. Only eager hunters extend hunting activities until Navruz, the Islamic New Year Days in March. On the side of nature, fox winter hair changes into shorter summer hair due to the rise of temperature in the spring season. According to local falconers, female foxes' hair especially reduces in quality due to the delivery of offspring. On the human side, newborn livestock will be expected in the spring. This means that falconers need to concentrate on various herding and husbandry duties. In the past, 5 year-old or 8 year-old eagles were released to the mountains

as part of an old Kazakh tradition. Then falconers started to look for new hunting companions in the mountains in April.

This section analysed the contemporary situation and techniques of hunting operations by Altaic Kazakhs. (1) The decline of hunting operations and hunters are testified from actual observation. This situation is reinforced by the decrease of foxes and prey animals, the expansion of trap hunting and gun shooting, the physical burden of hunting activities, among others. (2) This section also described actual hunting operations at the Agjal Mountains in Sagsai. Hunting routes and points, distance and duration of daily excursions, cooperation with beaters, and the positions of a central beater were specified from participant observation. (3) The diversification of hunting methods, such as burrow hunting, trace hunting, and trap hunting was discussed within the depiction of the process of capture. Overall, the productivity of Altaic Kazakh falconry has not been high, so it has been kept for more cultural and symbolic purposes. In addition, the hunter population has decreased and beaters, inevitable hunting cooperators, tend to avoid such a physically harsh burden. This kind of “decontextualisation” of falconry culture is one of the major threats now endangering Altaic Kazakh falconry.

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Part III

Cultural Sustainability of Eagle Falconry

6. Socio-Cultural Actions for Sustainability

Heritage Tourism & Cultural Alterations in Altaic Kazakh Falconry

6.1. Introduction

6.1.1. Recent Reconstruction of Altaic Kazakh Community

The core subject of this section deals with local safeguarding actions for Altaic Kazakh falconry tradition. Both, positive and negative impacts on Altaic Kazakh falconry and on the attitude of eagle owners were brought about by turning ethnic festivals into commercial tourist attractions and demonstration of "intangible cultural heritage (ICH)" and "cultural landscape". Tentative acceptance of the importance of ICH by the international community has been enabled by three key moments of change in the last quarter of 20th century: (I) In 1979; the acceptance of symbolic value as the prime reason for inscription of Auschwitz as a World Heritage Site, (II) In 1992; the acceptance of "cultural landscapes" as heritage-worthy in the World Heritage Convention (WHC) Guidelines, (III) In the 1990s, the rethinking of UNESCO's 1989 "Recommendation on the Safeguarding of Traditional Culture and Folklore" that resulted in the launching of a new Intangible Heritage Convention in 2003 [Deacon 2004: 310].

As indigenous people and traditional cultures become increasingly proud of their heritage and alert to preserve and profit from it, they are increasingly eager to present cultural landscapes as destinations [Buckley, Ollenburg, & Zhong 2008: 57]. Across the Altai regions, the first decade of the 21st century is a historically important period for rediscovery of Kazakh's local intangible culture. UNESCO has been developing "*The Convention for Safeguarding Intangible Cultural Heritage*" including culture of Altai craftsmanship. The Government of Altai Republic (Russia) also adopted a special preserving program in 2005, entitled "*Revival, Preservation and Development of Folk Art and Traditional Crafts in the Altai Republic* (2005–2010)" [Oktyabrskaya et al. 2009: 130]. Particularly the lasting eagle falconry culture of the Altaic Kazakh community in western Mongolia has been regarded as a nation-wide cultural property with the establishment of "The Golden Eagle Festival" (Бүргэдийн наадам/ бүркіт той) in October 2000. At the same period Kazakhstan started a complex program "*Historical and Ethnological Study of the Kazakhs of Mongolia*" intended to reevaluate Altaic Kazakh cultural resources for further development of the Kazakh nation itself [Molodin et al. 2008: 30]. Thus, this type of ethnic event shows a typical case of "defense identity" reaction against worldwide agoraphobic environment [González 2008: 807]. Its taste entails massive nationalization of particular legacy and tradition. These movements reflect cultural upheavals and represent an extensive awakening for cultural revitalization of local intangible resources

1. Eagle masters at The Golden Eagle Festival 2012

2. Ceremony at The Golden Eagle Festival 2012

3. Eagle calling-off contest

4. Eagle calling-off contest

5. Horse riding wrestling (Kok bol)

6. Local souvenir shops

Figure 1. The Golden Eagle Festival at the Ulgii Festival 2012 in Western Mongolia.

with ethnic utilities, simultaneously evoking ideas of resistance against disappearance. However, little academic attention has been paid to exploring the relationship between heritage tourism and sustainability, even though the two concepts evidently share a common theme [Garrod & Fyall 2000: 683].

6.1.2. Subject & Methods

To assess such a socially ambivalent influence as of the Golden Eagle Festivals, the author conducted semi-structured interviews with the people in charge of the festivals, local travel companies and other authorities between August 2012 and January 2013. He also carried out anthropological research with eagle hunters between August 2011 and January 2013, interviewing 47 eagle masters from Altai (Алтаи), Tolbo (Толво), Sagsai (Сагсаи), and Ulaanhus (Улаанхус) counties about their personal status, what they knew about the origins of falconry and their participation in the festivals. This section presents intensive sociological research to describe regional differences and the current status of local falconry and the eagle hunters. All prices are quoted in Mongolian Tugrik (1,600 Tugrik =1 US dollar). In addition, after June 2012 age, title, and a reference number were recorded for each subject.

6.1.3. "The Golden Eagle Festival" as an Axis of Cultural Alteration

The recent establishment of "The Golden Eagle Festival" (Figure 1: 1 - 2), which was launched by local Kazakh youths in October 2000, is a vital clue to the present situation of Altaic Kazakh falconry. The festivals aim at demonstration and promotion of Altaic Kazakh falconry and local eagle masters, and can be defined as the first ethno-cultural upheaval that the Altaic Kazakhs ethnic minority group experienced in the post-socialist period after the 1990s [Бикұмар 1994; Battulga 2007; Баттулга 2011]. The festivals have become an ethnic integrity symbolizing horse-riding falconry as an ICH. It is the first representation of an "ethnic heritage" in the Altaic Kazakh community. This "cultural proprietorship" inspired by eagle falconry is positively related to a massive marginalisation of Altaic Kazakh community in western Mongolia. During the period of democratization from 1991 - 1992, more than 40,000 Kazakh people ($_{approx.}$ 7,000 households) were estimated to repatriate to Kazakhstan from Western Mongolia. This was more than 80% of the total number of minority Kazakhs living outside of Kazakhstan returning to their historical homeland [Molodin et al. 2008: 29]. Altaic Kazakh community in Bayan Ulgii Province was a result of social reformation with successive inbound/outbound human migration during 1990s. Under unwillingly complicated social circumstances, the rediscovery/reevaluation of traditional falconry symbolizes a struggle against disappearance of the Kazakh community in Western Mongolia.

Recent festivals gather more than 50 eagle falconers and attract plenty of overseas tourists whereby they expect Altaic "*genius loci*" of nomadic herder's society, affiliated with "heritage tourism", or "Human-Ecology Interaction" for precious experience. For local eagle owners, the festival has become a good occasion to motivate eagle ownership. Therefore, the Ulgii Festival was for the first time acknowledged by UNESCO as a festival conserving an intangible heritage in March 2011. But in sharp contrast to the idea of cultural safe guard, the festivals seem to rapidly accelerate cultural alteration of eagle falconry towards

"decontextualisation". Especially, traditional arts and knowledge (TAK), and actual hunting operation have almost vanished. This results in disappearance of "authenticity" from local falconry context and loss of *in situ* living tradition in the animal herder's livelihood. In addition, eagles and eaglet transactions among local people, unusually happened before, have now been almost normalized which results in threat of natural resources (detailed in Chapter 7). Whereas the Golden Eagle Festivals give great motivation for cultural preservation, all these negative effects have been threatening future conservation substantially.

6.2. Result I:

The Golden Eagle Festival and its Extensive Development

6.2.1. The Ulgii Festival

The Golden Eagle Festival is becoming one of most successful and influential events, not only for the Altaic Kazakhs, but also for all people in Western Mongolia. The original plan for this festival was conceived around 1998 by two local travel companies, the Altai Tour co. Ltd. in Ulgii and the Nomadic Expeditions LLC. in Ulaanbaatar. Some local young Kazakhs agreed to this plan and they worked together to make falconry and the eagle hunters as the center piece of this festival. In 1999, they submitted their plan to the Provincial Assembly as the first ethnic event for Altaic Kazakhs. Eventually, through Decision no. 44 of the Bayan Ulgii Representative Committee Meeting on 24th January 2000, this festival was chosen to be an official prefectural event. The Ulgii Festival started in October 2000 with financial support from the two travel companies mentioned above, as well as from Bayan Ulgii Aimag and the National Tourism Department of Mongolia (Монголын аялал жуулчлалын холбоо). The first festival (the Ulgii Festival) was held on 6th October 2000 at Khal-Tolgoi in Bogot Sum which lies 18 km southeast of Ulgii city. A total of 60 eagle masters (five from each Sum) took part in the festival.

At the same time as the first festival was celebrated, the Association of Mongolian Eagle Hunters (Монголын Бүргэдчдийн холбоо) and the Foundation for Eagle Hunters (Бүргэдчин сан) were set up with Z. Kazbek (President of the Altai Tour co. Ltd.), H. Adelkhan (Manager of the Altai Tour co. Ltd.), and S. Medeokhan (President of Orman-an co. Ltd.) as joint directors. These associations aim:

To revitalise the tradition and custom of eagle hunting by the Altaic Kazakh minority group of Mongolia and to transmit the tradition to the next generation, to promote it to the nation as well as internationally, to protect the interests of eagle hunters helping each other… (from The Rules of the Association of Mongolian Eagle Hunters).

In addition, the association tries to help the locals conserve Altaic Kazakh eagle falconry with regular lectures about the proper way of taming eagles and keeping the tradition alive [Interview with, Kazbek, 2nd January 2013]. The 60 eagle masters who took part in the first festival were registered as the first members of the association. The number of registered eagle owners has increased every year and in 2003 there were 384 members [Баян-Өлгий Аймаг 2003: 3].

6.2.2. The Sagsai Festival

While the Ulgii Festival and eagle falconry has extensively flourished internally, as well as gradually acknowledged widely outside of Altaic Kazakh community, in September 2002, another Golden Eagle Festival ("The Sagsai Festival") was independently launched at the center of Sagsai County by a local travel company, Blue Wolf Travel Co. Ltd. (Қок жал со, ltd) run by Mr. Kanat at Ulgii city. At that same time, the original association of local falconers "Golden Eagle Association (Алтан Бүргэд Клыб)" was also embarked with agreement by 120 sagsai residents at an organized meeting. The Sagsai Festival is held every September and achieved almost same scale as the Ulgii Festival until 2010. According to Ulgii Statistics Office, a total 300 oversea travelers came to visit the festivals in the year of 2010 [Interview with Mandat, August 2012]. In February 2007, Mr. Kanat and Opor саарал Travel Company also held a "Mini Golden Eagle Festival (Бүргэдийн наадам)" at Ulaanbaatar with 20 masters invited from Bayan Ulgii Province. The company keenly published an informative social paper "*Altan Burged* (Алтан Вургед)" in 2007 for promoting local falconry. As a result of these successful cultural promotions, 21 Kazakh eagle masters were praised for traditional intangible arts and knowledge and firstly given the national award by the President Enkhbayar in February 2008 (Figure. 2). Afterwards, Altaic Kazakh eagle falconry was nation-widely known by Mongolian people and small falconry demonstrative events are also continued in every February at Ulaanbaatar. As a consequence of these cultural upheavals, the Ministry of Education, Culture and Science of Mongolia applied to UNESCO in consultation with Abu Dhahi Authority of Culture and Heritage on 13th August 2009, with signature of 42 eagle masters in Bayan Ulgii Province [UNESCO 2009]. This became a decisive action to finalise an inscription of Altaic Kazakh falconry as "living heritage" on "*The Representative List of the Intangible Cultural Heritage of Humanity as a Living Human Heritage*" in October 2010, together with 11 countries [UNESCO 2010a & 2010b].

Figure 2. Kazakh eagle masters in Ulaanbaatar (in 2008)

Both Golden Eagle Festivals were obviously successful, even though they brought about the greatest cultural upheaval the Altaic Kazakhs have experienced in the post-socialist period. American and European travelers were the main visitors as they are very interested in local culture and appreciate eagle falconry among the Kazakh herdsmen as “heritage tourism”. The festivals encouraged people in the communities to keep eagles, and over the last 12 years ideas about conserving this tradition have spread. Official inscription on *The Representative List of the Intangible Cultural Heritage of Humanity* as a “living human heritage” in March 2011 was the culmination of, and reward for, their efforts. Therefore, this development is important not only for ethnic representation of Altaic Kazakhs in Bayan Ulgii, but also for the whole of Mongolian national culture. However, the role of the festivals has brought about ambivalent influence on the context of local falconry. On the one hand, the number of eagle-ownership has increased for purpose of demonstration at festivals. On the other hand, this cultural “manifestation” had a certain impact on local eagle masters to disconnect from the initial context of traditional falconry and actual hunting activity for obtaining fur. Therefore, positive and negative ambiguities are circulated in recent local falconry context with the Golden Eagle Festival as an axis of cultural alteration. In other words, the former impact is contributing to raise public awareness, and the latter impact is accelerating the process of decontextualisation of a long-lasting falconry discipline.

6.3. Result II:

Ambivalent Festival Impacts on Falconry and Falconers

6.3.1. Demonstrative Falconry for Tourists: The Sagsai and Altai Case

One of the massive cultural alterations is the substantial reformation of eagle falconry from “hunting” to “demonstration”. In addition, eagle ownership became one way to invite foreign tourists to the home for demonstration and income generation. According to interviews with 47 local eagle maters/owners in Altai, Sagsai, Tolbo, and Ulaanhus counties, the chance of participating in the festivals provides significant motivation for eagle ownership (Table. 1). In this interview, 23 masters joined in the Ulgii Festival and 28 masters participated in the Sagsai Festival at least once. In Sagsai territory, 11 masters joined from the first festival of the Sagsai Festival in 2002.

(1) The Sagsai Case: In Sagsai County, most of today’s eagle masters are only interested in taking part in the festivals, even though a plenty of genuine hunters with well tamed eagles used to live there in previous time. Especially with reference to a case in Sagsai territory, most falconers have specialized only in participation in the festivals. Providing falconry

Table 1. Falconer's Succession of Falconry in Western Mongolia.

Region	Falconer	Age		Age of Beginning		Ulgii Festival	Sagsai Festival	1930's	40's	50's	60's	70's	80's	190's	2000's	
Altai	A-01	1937	75	Unknown		×	×									
	A-02	1956	56	1981	25	○	○									
	A-03	1961	51	1983	22	○	○									
	A-04	1962	50	1987	25	○	○									
	A-05	1967	45	1982	15	○	○									
	A-06	1973	39	1990	17	×	×									
	A-07	1982	30	2002	20	○	○									
	A-08	1982	30	2004	22	×	×									
Bogot	B-01	1959	53	1996	37	×	×									
Sagsai	S-01	1916	95	1951	30	×	×									
	S-02	1937	74	1958	20	○	○									
	S-03	1940	71	1963	22	○	2002									
	S-04	1945	66	1976	30	○	○									
	S-05	1946	65	1972	25	○	2002									
	S-06	1950	61	1981	30	○	○									
	S-07	1956	55	1972	15	○	2002									
	S-08	1957	54	1988	30	○	2002									
	S-09	1960	51	1996	35	○	2002									
	S-10	1960	51	1991	30	○	2002									
	S-11	1964	47	2003	39	○	2002									
	S-12	1965	46	1992	26	○	○									
	S-13	1967	44	1993	25	×	2002									
	S-14	1971	40	1994	22	○	2002									
	S-15	1975	36	1991	15	○	2002									
	S-16	1977	34	1995	17	×	2002									
	S-17	1979	32	2005	25	×	×									
	S-18	1983	28	2000	16	×	×									
	S-19	1984	27	1995	10	○	○									
	S-20	1986	25	2002	15	×	×									
	S-21	1989	22	2012	22	×	×									
	S-22	1991	20	2008	16	○	○									
	S-23	1995	17	2006	11	○	○									
Tolbo	T-01	1922	90	1952	30	×	×									
	T-02	1942	70	1957	15	×	×									
	T-03	1947	65	1966	19	×	×									
	T-04	1954	58	1997	43	×	×									
	T-05	1958	54	1998	40	×	×									
	T-06	1963	49	1983	20	×	×									
	T-07	1966	46	2008	42	×	×									
	T-08	1967	45	1990	23	×	×									
Ulaanhus	U-01	1932	80	1962	30	×	×									
	U-02	1941	71	Unknown		2002	2000									
	U-03	1949	63	1995	46	×	○									
	U-04	1956	56	1971	15	×	○									
	U-05	1960	52	1980	20	×	○									
	U-06	1966	46	1998	32	×	×									
	U-07	1977	35	2002	25	○	○									
Total: n=47 (person)						22	28			4	3	4	9	14	10	1

demonstrations for tourists is today the main reason why Sagsai falconers keep eagles. Even one of the eagle masters (S-11) takes part in the festivals with a male Golden Eagle for demonstration purpose although male birds were never used for taming and hunting in traditional Kazakh master's sense.

After a year-round observation about their activity, it became clear that only 3 eagle masters (S-07, S-11, S-22) still hunt regularly in winter; of the others, probably more than a half of them have never had any actual hunting experience. Moreover, 2 of the masters (S-10, S-15) normally hunt with traps and rifles. There are also 4 households (HHs) (S-05, S-08, S-11, S-14) who open their homes as tourist accommodation in affiliation with a local travel company. Owning an eagle and demonstrating what it can do have become a way for local people to make money by inviting foreign tourists to their homes. In fact there are around 30 eagle

masters in Sagsai of whom 18 belong to traditional falconer families, and only 5 eagle masters (S-10, S-11, S-17, S-21, S-22) set up on their own account.

From an anthropological point of view, Sagsai falconers likely have some internal conflicts as if amending a gap between authenticity and demonstrator. Nonetheless, most of the eagle masters tell tourists that “We go hunting almost every day in winter” - although nobody really does. Likewise, every eagle master insists that “Our own eagle was taken directly from the nest”, but that is not true either. This is because an *eyas* (eaglet) captured from the nest is called *Kolbala* (Қолбара) – a term that implies respect. Such an eaglet is believed to grow up stronger than any captured young or adult haggard bird, and is able to hunt wolves - a “wolf hunter eagle”. On the other hand, young or adult birds captured in a trap (or traded) are called *Juz* (Жұз). They are thought to be less valuable or more vulnerable than *kolbala* eaglets. However, after observing the masters for a year we found that only 3 *kolbala* eaglets were actually tamed by Sagsai masters (S-10, S-11). Most of the Sagsai eagle owners know very well that the falsehoods they tell represent what “a genuine hunter” or “authentic falconer” should do. In other words, they well understand that an authentic eagle master needs to go hunting every day with his eagle, and should have captured his own eaglet directly from her nest as hunters used to do in the past. However, such tradition has been discontinued among them now. This contradiction shows the process of decontextualisation of eagle falconry, but it also shows that local eagle masters suffer some sort of internal conflict when they pretend to be authentic eagle masters just to impress tourists. Alternatively, their pretense could indicate a complete absence of TAK and discipline. For an instance, S-08 was officially invited to the 2nd International Falconry Festival 2011 (15th - 17th December 2011; Dubai) as “the traditional eagle hunter from Western Mongolia”. However, S-08 has not had any experiences of hunting and even taming techniques. His young eagles successively died both in 2011 and 2012, presumably because of careless taming and feeding (they were fed the liver of sheep/goat, which is forbidden to feed by old rule). Anthropologically speaking, and based on cultural relativism, this may be defined as an “acculturation” in contemporary contexts. However in a counter sense, their present behaviour indicates how difficult it is to follow TAK in the local livelihood.

(2) The Altai Case: Eagle masters in Altai County also show some similarities with those in Sagsai. There are about 12 eagle masters in Altai territory and the author visited 8 of them. They are very keen on participation in the festivals even though the location is most detached from the festival places. 5 - 6 of them join both Ulgii and Sagsai Festival almost every year (Figure 3). Their ethnic clothes of which the surface is completely made from fox or wolf fur has become a distinction of eagle hunters from Altai County. Their falconry equipment is also elaborately adorned with rivets and ornaments which easily recognizes original Altai traits.

Figure 3. Falconers from Altai County, Western Mongolia.

Figure 4. The Master Komarkhan, Western Mongolia.

One of the significant things in Altai County is that falconry culture has been transmitted mainly by one falconer family linage, “the Komarkhans”. Seven of the 8 eagle masters we met (all except A-03) are closely related to this family. The master Komarkhan, who died at the age of 95 years in 2009, was one of most famous eagle hunters in Mongolia (Figure 4). He was given several awards and honours by the government, and various overseas tourists and photographers used to visit him. Due to his reputation, participation in the festivals has been important for Altai eagle masters every year. However, since 2009 after the death of the master Komarkhan, they have not continued to hunt [according to A-06]. In addition, there has been no strong tradition of falconry succession amongst normal herders who do not belong to the Komarkhan family. Therefore the festival has not brought about an increase in the eagle masters population and only few community members have started eagle possession by themselves. In this sense, their cultural succession may be threatened in the near future by the loss of the leadership of the Komarkhan family.

6.3.2. Falconers without the Festival Impacts: The Tolbo Case

In contrast to domination of demonstrative falconry in the Sagsai and Altai case, a case in Tolbo County shows a different situation. Tolbo County (Figure. 5: 1) is situated about 65 km south from Ulgii city on the main road to Khovd Province (Ховд аймаг). The geographical location of Tolbo is better than of other counties. There are 15 eagle masters in winter pastures near the Sum center, and 8 of them have been researched as informants. As one of the traits, none of these hunters has taken part in any of the festivals since established. Main reasons for their absence were health and safety related: “*It is dangerous for demonstration because she is tamed for true hunting bird* (T-03)”, “*My eagle will get fat during participation* (T-06, T-07)”, “*The atmosphere will damage her mind and health* (T-05)”, “*She may assault on other eagles at the festival* (T-06, T-07, T-08)”, etc. Tolbo falconers have some anxiety about “***crabbing***” (= fighting against another eagles) at the festival.

Another distinctive factor is that actual hunting activities still go on in Tolbo. All of the 8 eagle masters have between 10 - 20 days' hunting practice each winter. When the author visited their winter houses in October 2012, almost all of them were away from home for hours on hunting expeditions. Their way of hunting is unique and does not follow the traditional rules. Traditionally, eagle masters go out with beaters and other hunters on horseback. Then a beater gallops his horse to the foothills of the mountain while the other eagle hunters go to the top of the mountain to look for foxes or other prey [see Chapter 5]. But, at Tolbo, everybody goes looking for prey at the same time with cars and motorcycles (Figure. 5: 2 - 4). When they find an animal, one hunter goes to the top of the hill or mountain on foot, and then a beater gets close to the prey from the foothills with a Russian hunting rifle (named "TOZ-8"). If the beater fails to shoot his prey, the hunters fly their birds toward the escaping target. In other words, the eagles and their masters are just one part of a multifaceted hunting strategy.

One reason such a hunting strategy has developed in this way is because, in Tolbo, it is possible to get to the hunting fields and up the mountain relatively easily by car and motorcycle without crossing a river or a marshy area. In the Sagsai and Altai regions it is only possible to access to the hunting mountains on horseback because they are surrounded by

1. Winter pasture of Tolbo

2. T-02 with his eagle

3. T-03 in hunting excursion

4. Prey-searching with motor cycles

Figure 5. Hunting scenes at Tolbo winter pasture in Western Mongolia.

rivers and marshy fields. In addition, the Tolbo eagle masters are mostly wealthy and possess about 300 - 400 livestock or more each. Their financial situation gives them an economic and psychological advantage which allows them to carry on hunting with eagles. However, as is shown in Table 1, similar to Altai County, no young successors to the huntsmen have emerged in the last 10 years. This means that the custom of hunting with eagles may not last much longer, even though it is currently quite widely practiced.

6.4. Discussion

Current Issues for the Golden Eagle Festival

UNESCO [2012: 28-34] states that participation of the local population in the preservation of their cultural and natural heritage is greatly encouraged by the World Heritage Convention and some guiding manuals consider it as one of the principal driving forces for cultural safeguarding action. However, as one of the critical issues, recent festivals, both the Ulgii and Sagsai Festival, are designed not for involving local residents, but rather to attract overseas travelers. One reason for this is that the Ulgii Festival is held at Khar-Tolgoi, 18 km away from Ulgii city, and they collect entrance fees (30 US dollars or 24,000 Tugrik) from visitors at a checkpoint on the road. This atmosphere makes it difficult for local people to join physically and psychologically. This attitude seems to expand negative feeling to the locals that festival operators are only fulfilling their own business opportunity. Hence, the Ulgii Festival would not evoke a local sense of "cultural ownership" which develops the internal corporative sense to raise the festival up. The Sagsai Festival involves local people a little more because it is held near the center of the village. Each year it attracts nearly 200 locals, especially school children and students who make up nearly half of the local participants and see it as a major local event. At the festival, 5 households set up small shops, 3 selling food and 2 setting up eating places in their yurts every year. However, the other 11 to 15 shops come from Ulgii city and sell ethnic artifacts. Most of the 300 non-local visitors stay in Ulgii, not in the village. Consequently the festival has little economic effect on Sagsai village itself.

In fact, many of the negative comments that were recorded in random interviews with locals made exactly this point, for example, "*That is not an event for us and it is pointless to try to get involved*". Even a religious leader at Ulgii city commented that "*The festival is just for touristic and commercial purposes, it is not about our Kazakh identity*" [Interview with the Imam Usrkhan, 31st December 2012]. In other words, the festivals, especially the Ulgii Festival, do not really make people feel they are about *their* ethnic identity or about regional unity, nor would they see the Golden Eagle Festivals as a positive force for change. On the contrary, people feel that local interest in the festivals had declined over the years. The festivals have been promoted outside the region and have become business opportunities for limited

stakeholders and the organisers. Practically speaking, even though the Ulgii Festival is obviously an “ethnic event” under the official sponsorship of the local administration and government, the real purpose and actual effect is far from evoking ethnic unity and local support for cultural conservation in the Altaic Kazakh community. They would not really intend to maximize the opportunity of the Festivals for regional-cultural development that need to stress on eagle falconry culture as an axis of resilience and sustainability of their identity itself. The Ulgii festival at least should be opened more for public. For instance, the province authority facilitates the opening ceremony and related concerts and events in the center of the city. One good instance was seen in the Ulgii Festival 2006, at that time a fascinate parade involving falconers, musicians, school children, and local audience well dressed-up in ethnic clothes took place at the main square of the Ulgii city although this was never seen again.

The festivals have successfully exhibited externally the tradition of indigenous falconry and “skilled” eagle masters as own cultural asset since their establishment. Now, it is indeed time to raise internal/local public awareness. In general, local stakeholders (normal residents) can help identify problem areas, and even prevent time and money consumption of which views are helpful in every corner of trial and error [Pedersen 2002: 38]. Especially, according to the conceptual framework of tangible heritage sites in the concept of Human–Nature Problem in International Conservation from 1960 to 1999, the perception of “nature” has been changed to “wilderness” in 1960s, and then to “ecosystem; biodiversity; ecoregions” in 1980s, and later to “culture in nature and nature in culture” in 1990s. Similarly, an idea of simple “representations of local people” was turned into “people are the threat”, and then into “people cannot be ignored; people are a resource”, and later into “align with rural people” [Jeanrenaud 2002: 21]. Now a further elaborate concept between heritage-society interactions is becoming “run with, for, and in some cases by local people”, or “managed to meet the needs of local people”, and the latter “viewed also as a community asset”, or “viewed also as an international concern” [UNESCO et al. 2013: 16]. Thus, these conceptual stages of heritage-people relationship suggest that cultural preservation will hardly be achieved without cooperation with local people together with integration of local emotional resilience against disappearance.

6.5. Conclusions

The Festivals as a Local Resilience for Cultural Sustainability

The Golden Eagle Festivals have had both positive and negative effects on the traditional context of local falconry praxis (Figure 6). The section points out major negative impacts; (1) Decontextualisation into demonstrative falconry, related to the disappearance of TAK and hunting activity, and (2) Absence of local residents on behalf of cultural preservation as internal resilience. The former, the demonstration and assembly of local eagle masters are

indeed considered as a driving cultural reinforcement to expand new "demonstrative falconry". Consequently, the Sagsai Festival has given a certain influence on keeping captive eagles and even on new participation to be an eagle owner. It means that most of those are not "authentic eagle masters", but just "eagle owners" or "demonstrators". The latter implies that the Golden Eagle Festivals are insufficiently engaged in a holistic internal resilience supported by local people. In fact, most Altaic Kazakh eagle hunters have become eagle-owners pretending to be authentic eagle hunters - but they are no longer involved in traditional reclaiming, hunting excursion, the capture and release custom, nor are they concerned with the guardianship of the natural world.

Even a falconer's mind and action are not a monolithic entity in this situation, according to cases from Sagsai, Altai, and Tolbo counties. Continuation of hunting practice suggests a certain parameter to assess atmosphere of "cultural authenticity" of local falconry context, even if under the process of acculturation towards contemporary style. Hunting operation needs to stand for inevitable procedures in taming, feeding, and training. As is suggested in a hunting practice from the Tolbo case, each stage of hunting needs not to insist on "traditional" ways of thinking. The contemporary contexts will evoke new perceptions and ways for reclaiming. However, the spiritual guardianship, created through centuries of discourse between local human and native wildlife conservation, had been dismantled and will hardly be revitalized again in Altaic Kazakh society today. The original living context of coexisting with Golden Eagle scarcely succeeds in this form of demonstrative ownership.

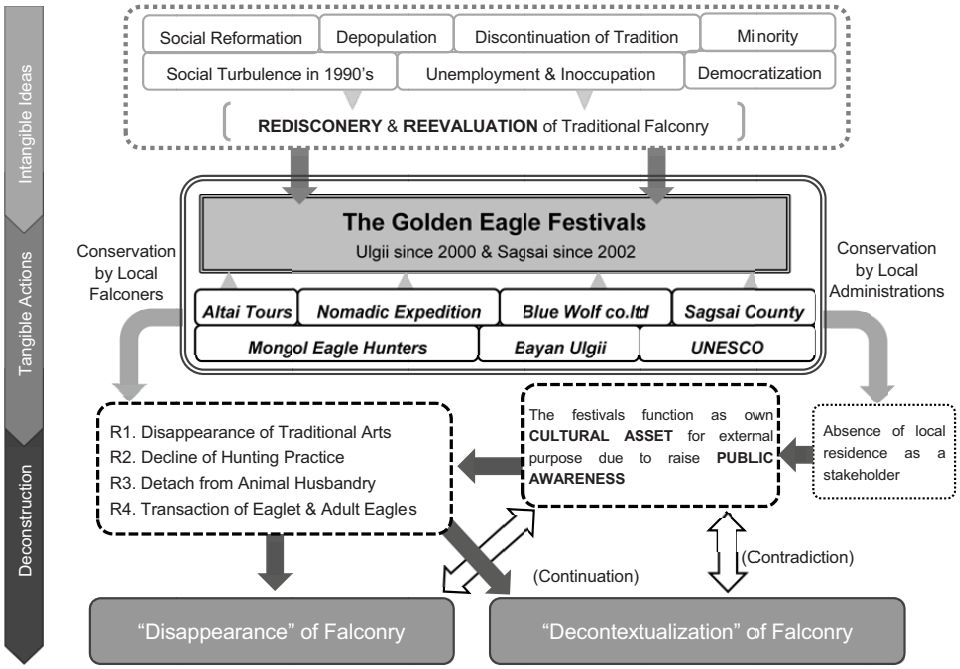

Figure 6. The Golden Eagle Festivals and their impacts on social circumstances in Western Mongolia.

Intangible heritage can be reproduced for non-local people while maintaining its authenticity [González 2008: 809]. The physical frame of intangible culture may be able to survive even if its original meaning, form and purpose are lost and replaced by the re-establishment of independent values for “heritage” conservation process. However, simple eagle ownership will never achieve a substantial solution for cultural preservation in case of eagle falconry. A sequence of decontextualisation processes will rather fuel a more negative cycle, because the culture itself has developed from a highly integral part of natural environment, local avifauna and wildlife, and human livelihood, based on; (1) Transhumant animal herding (which provides meat to feed the captive eagles), (2) Environmental health (which facilitates eagle and prey population, and nesting environment), and (3) Continuation of hunting operations (which provide a proper chance to train “hunting birds”) with natural and cultural factors intermingled together. Even if one factor is lost, eagle falconry culture will not survive. At the same time, the recent situation of eagle falconry well suggests that a safeguarding plan and agenda must strongly consider the original socio-historical context, and even economic and political utilities surrounding each intangible culture.

Revaluation of the cultural importance of eagle falconry is actually increasing, even though the core activity is changing rapidly in a process of touristic modernisation. However, it is probably too early to register the Altaic Kazakh eagle falconry culture on the *List of Endangered ICH* because systematic academic research and the development of criteria for appropriate ways of revitalising the tradition has only just begun. This is a resilient tradition and the authors expect its practitioners will find ways of ensuring its survival. In view of the challenges, this research has confirmed that Altaic Kazakh eagle falconry cannot be preserved outside its original context.

Taking account of these socio-ecological issues, this chapter makes the following preliminary suggestions for a change which would allow eagle falconry to remain viable:

#1. Environmental Side: There should be legal regulations about the management of natural resources, including protection of eaglets and potential prey animals such as foxes. This would safeguard both the Golden Eagle population and their prey.

#2. Cultural Side: Measures must be taken to preserve and transmit TAK about taming and hunting practices, and daily taming procedures need to be more carefully supervised.

#3. Socio-ecological Side: There must be sustainable development of local animal husbandry and it needs to become more productive. This will make it easier for eagle-owners because there will be food for their birds.

#4. Social Resilience Side: Local residents should be encouraged to get more involved with the festivals. This will create a sense of “ownership” of eagle falconry and of the

Golden Eagle Festivals, which will in turn lead to a movement for cultural preservation powered by social resilience.

Both direct conservation actions #1 - #2, and indirect actions #3 - #4 are essential to achieve the minimum ecological requirements that will support eagle falconry in the future.

The Golden Eagle Festivals should become successful examples of ethno-cultural representations, not only for Altaic Kazakh, but also for ethnic minority groups in other parts of the world. However, the current situation surrounding the Altaic Kazakhs indicates the necessity of creating a full cultural infrastructure with socio-political support in order to preserve local eagle falconry as a living intangible cultural heritage for the future.

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7. Sustainability Safeguarding Actions

in Socio-Ecology and Natural Resource Protection

7.1. Introduction

Social/ Natural Requirements of Eagle Falconry

In order to preserve eagle falconry as a living heritage for the future, one of the inevitable conditions is to secure food for eagles and to protect appropriate environmental conditions. Incidentally, the centuries-long tradition of Altaic Kazakh falconry can be explained by traditional transhumance livelihood linked to animal herding economy, which is well adapted to the nature of the Altai Mountains. This section will consider safeguarding actions for sustaining eagle falconry from the perspective of socio-ecology and natural basis. It is characterised by (1) Maintenance costs and economic burden concerned with eagle ownership, and (2) Natural resource management such as protection of nesting environment and limitation of eagle traffics as main points of intervention. It should be a key clue to preserving eagle falconry, which will be mediated by the development of a local transhumant animal herding economy together with natural resource management. This section particularly thinks of indirect contributions for sustainability of Altaic Kazakh falconry culture.

7.2. Socio-Ecological Conditions for Eagle Ownership Facilitation

7.2.1. Alleviation of Feeding Diet with Sheep/Goat Reproduction

The owner of a raptor is obliged to carry out feeding and breeding procedures as was mentioned above in Chapter 4 (4.5.2.). A hunting eagle needs about 136.5 kg up to 181.5 kg of feeding flesh in a year which is equivalent to 6 – 9 heads of local sheep/goats (S/G head). If the eagle's diet overlaps with the herder's, this amount would become a heavy burden for the eagle owner. This would be a much heavier burden particularly for non-herders to provide such a huge amount of flesh annually in a sedentary livelihood. Eagle ownership is thus highly dependent on livestock reproduction from a transhumant animal herding economy. However, the cultural constitution of modern and mediaeval falconry has been largely dependent on the aristocratic stratum. For this reason, raptor maintenance has not really been seriously considered as a burden by such an elite social class.

Table 2. Number of livestock in 3 stratum groups (based on data at USO) in the study area.

Case*	Adult						Juvenile					
	Camel	Horse	Cattle	Sheep	Goat	Total	Camel	Horse	Cattle	Sheep	Goat	Total
Lg > 201 (n=15)	13	266	326	3,408	1,879	5,892	3	96	131	1,663	835	2,728
Mg = 101~200 (n=39)	36	249	304	2,378	2,526	5,493	11	83	126	1,112	1,089	2,421
Sg < 100 (n=71)	9	187	350	1,263	1,592	3,401	1	65	158	607	800	1,631
Total (head):	58	702	980	7,049	5,997	14,786	15	244	415	3,382	2,724	6,780

* Households devided into 3 groups according as livestock scale

Table 3. Proportion of average livestock possession in the study area of Western Mongolia.

Case*	Adult						Juvenile					
	Camel	Horse	Cattle	Sheep	Goat	Total	Camel	Horse	Cattle	Sheep	Goat	Total
Lg > 201 (n=15)	0.9	17.7	21.7	227.2	125.3	392.8	0.2	6.4	8.7	110.9	55.7	181.9
	0.2%	4.5%	5.5%	57.8%	31.9%		0.1%	3.5%	4.8%	61.0%	30.6%	
Mg = 101~200 (n=39)	0.9	6.4	7.8	61.0	64.8	140.8	0.3	2.1	3.2	28.5	27.9	62.1
	0.7%	4.5%	5.5%	43.3%	46.0%		0.5%	3.4%	5.2%	45.9%	45.0%	
Sg < 100 (n=71)	0.1	2.6	4.9	17.8	22.4	47.9	0.0	0.9	2.2	8.5	11.3	23.0
	0.3%	5.5%	10.3%	37.1%	46.8%		0.1%	4.0%	9.7%	37.2%	49.0%	
Average (head):	0.5	5.6	7.8	56.4	48.0	118.3	0.1	2.0	3.3	27.1	21.8	54.2
	0.4%	4.7%	6.6%	47.7%	40.6%		0.2%	3.6%	6.1%	49.9%	40.2%	

* Total Posession of Livestock based on Table. 02

Annual feeding amount requires a minimum livestock possession and reproduction at each eagle owner's home. According to statistical data from the Ulgii Statistics Office (USO) and the livestock research at Buteu Winter Pasture (BWP) and Sagsai Territory in 2011 and 2012, the result of total livestock possession at each household is summarized in Table 2 – 3. The households are divided into three groups depending on the total possession of adult livestock: (1) Large-scale household group (Lg > 201 adult livestock), (2) Medium-scale household group (Mg = 101 – 200 adult livestock), and (3) Small-scale household group (Sg < 100 adult livestock). In this comparison, Sg households seem to consume almost the total number of annual newborn livestock so that they would not expect a yearly total increase of livestock from their reproduction and consumption balance (annual consumption is 20 – 25 $_{\text{S/G-heads/ HHs}}$ in average). The birthrate of every 10 sheep/goats (Lg: 4.72, Mg: 4.49, Sg: 4.93) suggests an increase ratio according to the number of total livestock. As for falconer households (total 21 $_{\text{HHs}}$) in the Sagsai territory, 7 $_{\text{HHs}}$ (S-03, S-05, S-19, S-17, S-18, S-21, S-22 all in BWP) belong to the Sg stratum. Settled 4 $_{\text{HHs}}$ (S-09, S-10, S15, S-20) have very limited livestock to maintain an eagle. Another 11 $_{\text{HHs}}$ belong to the Mg group. Half of the eagle-owner households should have some difficulty in keeping up the maintenance of their eagles. In general, the total 90 – 100 adult livestock possession (with 40 – 45 heads of annual juvenile birth) is considered as a parameter of a "normal standard life" in animal herding livelihood to secure eagle ownership (when taking the annual mortality ratio of sheep and goats as 5 heads (until 4 – 5 year-old adult) into consideration).

As a normal requirement by herder households, slaughter of 2 $_{\text{S/G-heads}}$ for monthly consumption should be ideal to spend a general standard life without worry and too much saving attitude (annually about 24 $_{\text{S/G-heads}}$ consumption). In a typical lower stratum household (S-22) of which family members are parents with 4 children (20, 17, 10 year-old male, and 21 year-old female), their annual livestock consumption was 12 - 15 $_{\text{S/G-heads}}$. Wealthy herder

households will additively slaughter 1 horse and 1 cattle every November [Soma 2014]. This amount is also supported by livestock research at the Bulgan territory in summer 2013. The annual amount of herder's consumption is estimated at 12.4 heads (including horse and cattle consumption). It seems insufficient to keep a hunting eagle at home. This is not the only reason, nevertheless there are only two eagle owners in the Bulgan territory. To secure annual feeding consumption of the eagle (6 – 9 $_{S/G\text{-}heads}$) with minimum standard of livelihood (24 $_{S/G\text{-}heads}$), the total annual number of newborns should be 30 – 39 $_{S/G\text{-}heads}$. This suggests that herders who do not have more than 100 adult livestock might be unable to keep a hunting eagle safely due to insufficient achievement of the feeding task.

BWP at Sagsai territory has a typical poor status in the regional community of Mongolia. Nine eagle-owners (S-01, S-05, S-11, S-13, S-17, S-18, S-19, S-21, S-22) live in this narrow pastureland. Some of them are living under quite poor conditions. The living status and productivity of animal husbandry by Altaic Kazakhs seem to be at a much lower level than those in other places. Lower living status will be a direct threat for the preservation of eagle falconry.

Altaic Kazakh herders in the Altai regions have a certain kind of structural vulnerability in their living status and herding condition. It greatly ascribes to a distorted post-socialistic social structure and the system created during 1990's. Economic disparity within the society has accelerated few members of the rich stratum to be much better, but never encouraged the poor stratum to be rich [Fernandez-Gimenez & Batbuyan 2004]. During this early transitional stage to democratisation, local Kazakhs across Bayan Ulgii Province completely lost their jobs because of the collapse of the collective farm system (*Khodoo Aji Akhuin Negdel*). "De-collectivisation" between 1991 and 1993 marked a major transformation in the herding sector, with a return to family-based, subsistence-oriented herding system [Upton 2008: 178]. In 1992, range and pasture land allocated to local herds were also reformed. The collectives that once allocated pastures and campsites and directed seasonal movement patterns were also dismantled in 1992 and all state-owned livestock was privatised [Fernandez-Gimenez & Batbuyan 2004: 142]. Almost all local herders participated in collective farming (*Sangiin Aj Ahui*) during the 1950s – 60s. In particular, those older than 40 years have such a work experience. As in other places, many of the poor Kazakh herder households possessing less than 100 livestock are, so to speak, "the Post-Socialist generation" who "re-pastoralised" during the 1990s. Local Altaic Kazakh communities surrounding eagle masters and eagle owners in nowadays have been living in a difficult situation based on economic stagnation and lack of social institution due to the multiple reasons caused by social turbulence in 1990s.

The author also has the impression that local Kazakh herders do not really have a wide variety of knowledge about herding and husbandry skills — the so-called "Traditional Ecological Knowledge" (TEK). This type of indigenous knowledge is transmitted from one generation to the next, representing the cumulative local knowledge, which is modified and

amended as a result of new experiences and observations of nature [Fernandez-Gimenez 2000: 1318]. However, through the process of collectivisation, traditional knowledge and skills including TEK were lost or discontinued in many parts as a result of the Soviet-style modernisation introduced into local Mongolian society. It is also considered that a number of poor animal herders, without traditional knowledge, skills, and criteria, were created under the privatisation process and the risk of poor livestock and pastureland management increased as a result [Fernandez-Gimenez 2000; Sasaki & Gerelmaa 2008; Uemura 2004: 9]. Recent trends towards less mobility may also lead to overgrazing in certain areas [Fernandez-Gimenez 2000; Laurie et al. 2010: 326].

Insufficient technical knowledge for husbandry works especially in Sg herder households seems to bring about negative attitudes among herder's mind, such as resignation or laziness, and effortless toward annual productivity in their herding livelihood. Thus, one of the tasks needed to be undertaken is to support herders with successive technical guidance and advice for effective herding and husbandry skills to be developed and promote productivity for (1) Hay stocking, (2) Smooth reproduction, (3) Veterinary care for newborns and juveniles, (4) Daily grazing technique, etc. It is indirect cooperation that is nevertheless essential to achieve substantial sustainability of both falconry and animal herding.

7.2.2. Analysis of the Social Inheritance System "Ultimogeniture": Maldistribution of Wealth

Furthermore, the impoverished condition of Kazakh herder households does not only reflect their minority status and the social confusion of the 1990s, but also Kazakhs' unique inheritance system that is a centuries-long tradition. According to this inheritance system, the youngest brother has a right to inherit all family property exclusively. This has been widely known in Eurasian nomadic societies, even 2,300 years ago. This traditional inheritance system, known as "ultimogeniture (postremogeniture)", may have caused some negative financial and psychological restrictions to block further socio-economic development in the Kazakh community. In Kazakh terms, this youngest brother is called "*changarak"* (шаңырақ), which means a ceiling circle of the yurt situated in the centre (Figure 7). This contains a symbolic metaphor to implicate "a core of the family" and "a successor of the clan" in the local traditional belief system. This system has become more moderate, and normally family members will share some properties with commitment, even in the southern part of the Bayan Ulgii Province.

Figure 7 The center circle of yurt (*Kara changarak*) in Western Mongolia.

However, in all households in the Sagsai region, the changarak exclusively inherited almost all the property and belongings of his parents, thereby becoming a successor of the family linage. 15 out of 125 households (12%) possess more than 200 livestock (Lg stratum) in the Sagsai territory (Table 2). They dominate 39.9% (adult: n=5,892/ juvenile: n=2,728) of the total livestock (adult: n=14,786/ juvenile: n=6,780). Additionally, the head of 9 $_{HHs}$ of Lg households (60%) are the changarak brothers. Throughout live-in observation in the herding community, an idea of negative self-constitution by local herders was very frequently observed through ethnographic interviews, implicating “Wealth, money, position, and livestock are given to the changarak inherently. The rich people’s wealth status is predetermined from the beginning of life. It is meaningless to work hard to be rich or wealthy…”.

In connection to the dominance of the youngest brother in the local economy, some young changarak herders well represent the social and even economic privilege of changarak in the local community. For example, one young herder, Mr. KY (S-22’s uncle and S-11’s youngest brother), had his brothers and nephews engage in their own herding work with some pay. All grazing activities were undertaken by his elder brothers’ families; horses by the first elder brother, male goats by his second elder brother S-11, and own goats and their herding care by his third elder brother. In many aspects, the changarak’s social and economic position is inevitably higher than those of his elder brothers or neighbours. Mr. KY’s three elder brothers are almost economically subordinated to their youngest brother with the charge in all his husbandry works. The changarak inheritance system shows some aspect of privilege and the uneven distribution of wealth.

To put it briefly, socio-ecological sustainability of eagle falconry will never be achieved without the support of productivity in animal herds, specifically the promotion of annual reproduction for feeding the family plus the eagle. This does not imply social alteration of the inherent system in Altaic Kazakhs. However, the system may show some potential necessity for reformation in order to raise the living standard of falconers.

7.2.3. Interaction between Transhumance and Eagle Falconry

(1) Winter Correlations (Hunting on-season/Herding off-season): Eagle falconry and animal herding livelihoods are in a cycle of complementarity in subsistence (Figure 8). The hunting on-season generally extends from 20th October to the end of February. Only in this season are falconers able to obtain fox furs for ethnic clothes making as an exchange for gift or trade. This is because herding duties are minimal in the winter season. Concentrated slaughtering tasks are carried out every November when the cold environment enables preservation of a huge amount of flesh. From December to February, herders would not slaughter their own livestock. Because, livestock lose nearly 1/3 of their weight due to the shortage of grass, coldness, and

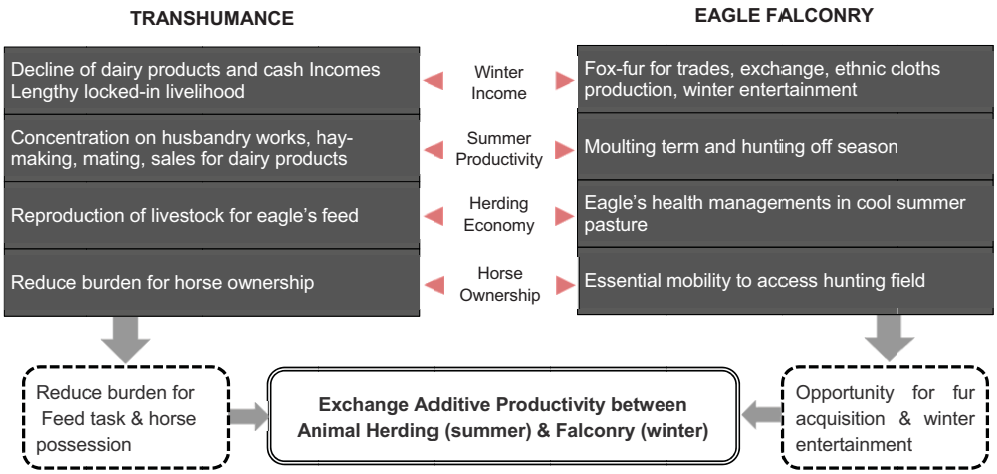

Figure 8. Falconry and animal herding livelihood correlations in Western Mongolia.

active movement in daily grazing. Likewise, dairy products are not produced in this season. The amount of cow milk (per one cow) reduces to almost a quarter of the amount taken in summer. Cold temperatures also do not allow for the production of a variety of cheeses, which need to dry in the sunshine. The stagnation of herding also brings about a shortage of monetary income. The period of hunting on-season largely overlaps with herding off-season. Therefore, herders can concentrate on hunting operations in the winter season for either practical fox fur acquisition or winter entertainment.

(2) Summer Correlation (Hunting off-season/Herding on-season): Hunting activities do not take place in the summer season. The molting term of the Golden Eagle starts in April, and they lose their feathers day by day. This may interfere with the eagles' speed and even make it difficult to keep a stable flight pattern. The masters would not let them join in vigorous hunting. At the same time, quarry and prey animals, especially foxes, develop summer hair. It is shorter than winter hair and recognised as being of lower quality for heat retention for clothes and for ornamental use in ethnic hats. In this season, herding duties increase with newborns, the sales of felt wool and cashmere hair, the making of dairy products, hay stocking, seasonal mobility, and various related herding tasks. Yearly reproduction of livestock will facilitate a huge feeding burden of eagle owners for captive hunting eagles. Herders inevitably need to possess riding horses for grazing and daily mobility as well. This living environment will contribute to the continuation of hunting activity. Consequently, herders can concentrate on their own herding works while resting their hunting eagles in summer.

(3) Seasonal Transhumant Mobility: Transhumance activity, the mobility to a cool summer pasture, used to accommodate good health management for hunting eagles. Golden Eagles are adapted to high altitudes in a cold environment. Along with seasonal mobility, a cool environment at summer pasture should be an essential condition for hunting eagles. Summer pasture also provides small mammals for feeding. At this point, both transhumant and eagle falconry should be in a cycle of interchangeable complementarity.

(4) Continuation of Horse Ownership: In addition, horse ownership is critical for Altaic Kazakh falconry. Riding horses are efficiently maintained within a social frame of an animal herding economy. For instance, if one wants to keep a horse in a city without pastureland, he needs to provide concentrate feed every month. It will cost about 15 – 20 US dollars per month along with other costs, and no less than 200 US dollars annually.

With only one exception among the Tolbo falconers, hunting operations in general are not carried out without horse riding due to (1) Mobility in the hunting mountains and (2) The heavy weight of a hunting eagle. According to the local hunting operation at Sagsai [see Chapter 5], the hunting zone is within 4 – 5 km, and at most 6 km distance from home. The longest round excursion in a hunting route is more than 20 km. All of the hunting routes require climbing up a steep mountain path on horseback. In the search for foxes, a falconer usually goes up to the top of the mountain in order to survey the landscape. Every hunting point is observed on a ridge or on the hill peaks. A riding horse is indeed necessary to gain access to the hunting points and to keep effective mobility during short hunting days in the winter.

Horse riding customs are still very common in local herders' communities in the whole Bayan Ulgii Province. Horses play an important role as a means of transportation, even for elementary school children who use them instead of bicycles. However, few horses are possessed by local eagle owners. Among Kyrgyz falconers, none possessed a horse at their own home because of increasing maintenance costs which have resulted in the discontinuation of hunting practices. Of the 23 falconers in Sagsai, most possessed at least one riding horse. Horse ownership should be an essential element for sustainable hunting customs in Altaic Kazakhs.

7.2.4. Indirect Cooperation for Substantial Sustainability in Livestock Reproduction

Thus, Outstanding Universal Value (OUV) of falconry culture has been created through the nomadic animal herding living context. Eagle falconry and transhumant animal herding economy are of additive productivity, interactively bridging the winter (hunting on-season/herding off-season) and summer seasons (hunting off-season/herding on-season). Asian falconry has a unique history which is little associated with food obtaining purposes in

many regions. Theoretically speaking, eagle falconry would not have evolved as an independent subsistence function alone without secured eagle feed provision from the reproduction animal herds [Soma 2007, 2008]. Transhumant animal herding economy is therefore considered a core prerequisite and a fragile socio-ecological basis for regulating the cultural sustainability of Altaic Kazakh falconry. Both productivity of transhumant herding and eagle falconry are interchangeable between summer and winter. In this sense, the sustainability of Altaic Kazakh falconry will be inseparably linked with that of the transhumant animal herding economy. This phenomenon is logically supported by the historical analysis [see Chapter I] that one potential origin of falconry practice lies in the "nomadic" steppe regions. Sustainability of eagle falconry culture for future generations is heavily dependent on not only successive safeguarding actions and expansion of public awareness, but also husbandry development by local people's effort based on own axiological point of view.

Ethnographic studies in the previous chapter suggested a strong integration of the holistic taming processes into a part of the "agro-pastoral landscape heritage". A cultural landscape is thus an area where the landforms have been created by human culture as well as by nature, and human culture has been created by the landscape as well as by the people [Buckley, Ollenburg, & Zhong 2008: 48]. According to UNESCO, the socio-economic sustainability of an agricultural system is important for maintaining the integrity and presence of natural elements in the rural landscapes [Gullinoa & Larcherb 2013: 391]. In this sense, Altaic Falconry Culture shows a format similar to "the Mixed Cultural and Natural Landscape". For instance, a site at the Laponian Area in Sweden, inscribed as a World Heritage mixed site in 1996, has an exceptional natural environment and close linkage to the cultural traditions of the Saami people, who have lived in the landscape for thousands of years [UNESCO 2012: 29]. The idea of a Biosphere Reserve is also applicable for the integration of both animal herding livelihood and falconry into the natural and cultural landscape. The Biosphere Reserves are sites established by countries and recognised under UNESCO's Man and the Biosphere (MAB) Programme to promote sustainable development based on local community efforts and sound science [UNESCO 2013a]. UNESCO so far enlists six sites for the biosphere reserve in Mongolia: Bogd Khan Uul, Dornod Mongol, Great Gobi, Hustai Nuruu, Mongol Daguur, and Uvs Nuur Basin [Man and Biosphere Programme (MAB) 2006].

However, direct protection may not always achieve the long-term preservative purpose. Tourists' expectations toward the Golden Eagle Festivals and Altai regions are the encounter of an "*in situ*" status of nomadic herder's society together with falconry tradition. The cultural landscape of the Mongolian steppes generally consists of four main elements: steppes, herds, horses, and yurt [Buckley, Ollenburg, & Zhong 2008: 57]. The Altai region could attempt to add two more universal distinctions: "mountain range" and "eagle masters". UNESCO's traditional agricultural and agroforestry landscapes are characterised by systems and land management activities, providing a high degree of multifunctionality in terms of ecosystem services [Gullinoa & Larcherb 2013: 390]. An institutionalisation of a systemised fur market may motivate

additional indirect protection of the fox hunting tradition; nevertheless, some potential risks for abuse of the system are to be expected. For example, the UNESCO Commission has used economic farm support systems in order to reduce the risk of abandonment of agricultural land, and consequently local product market collapsed of some endangered wine related products in the Pico Islands (Portugal) [Gullinoa & Larcherb 2013: 394]. One of the reasons for the decline of Kyrgyz falconry was the collapse of the sales route of fox fur materials obtained by falconry hunting [Soma 2007, 2008]. UNESCO [2013b: 4] explains that the safeguarding of intangible cultural heritage does not mean fixing or freezing the ICH in some pure or primordial form; rather, it is about the ongoing transfer of knowledge, skills, and meaning. This section does not advocate achieving cultural preservation under the *status quo* conditions of Altaic falconers'/ herders' livelihood. Reorganization centering on hunting activity promises essential care and treatment in eagle taming and reclaiming procedures, as well as continuation of frequent training with a practical dimension, which will be necessary under the changing circumstances that local falconers face.

Speaking from the standpoint between theoretical ideas and personal experience of life together with local herders, a simple compensation, subsidy, monetary donation, and any other "giving-support" provided by local governments would never have positive effects on the Altaic Kazakh community. These would in fact severely devastate the local falconry culture, making its revitalisation impossible due to the potential abuse of the welfare system. As a result, local herdsmen would come to expect compensation with insistence. Eagle trading would greatly expand in a very short period at the same time (stated in the below section). Therefore, indirect support to improve the traditional animal husbandry will fulfil the essential demands of eagle ownership and hunting operations with (1) support of annual reproduction of livestock herds for feeding the eagles, (2) horse ownership, and (3) summer/ winter specialization, for complementarity of the seasonal work sharing. Unification of these activities would be highly beneficial to overcome structural vulnerability of eagle falconry. In this case, a systemised fox fur trade, such as by integrated management through a governmental facility as well as concerning wild life management remain essential means to secure monetary income for falconers during the harsh winter season. Simple financial supports would not fulfil the substantial requirements of Altaic Kazakh falconry culture.

7.3. Natural Resource and Environmental Basis for Sustainability

7.3.1. Eagle Traffics and Oblivion of "The Capture and Release Custom"

Human and eagle interactions have been apparently changed into a negative cycle on the human side. The traditional regulation, "The Capture and Release Custom", is no longer practiced by local falconers. A certain deterioration of human-nature exchange entails

Table 4. Exchange of tamed eagles (from August 2011 to September 2012) in Western Mongolia.

Region	Falconer	Age	Eagle Pocessi	Eagle's Age	Past Holds	Dead	Capture	Bay	Sell
Sagsai	S-6	61	2	13/1	5			1 (juvenile)	
	S-7	55	1	5	4				
	S-8	54	1	5	3	1		1 (adult)	
	S-10	51	1	6	5		2 (eaglet)		2
	S-11	47	1	1	5	1	1 (eaglet)		
	S-16	34	1	4	3			1 (adult)	1
	S-19	27	1	6	2				1
	S-21	22	1	7	1			1 (adult)	
Tolbo	T-8	45	2	5	3		1 (adult)		
Ulaanhus	U-7	35	1	1	3	1		1 (juvenile)	
	n=47 (person)					**3**	**4**	**5**	**4**

additional adverse impacts on traditional relationships. This decontextualisation has been caused by massive modernisation, tourism/commercialisation, and eagle capture for demonstration purposes. In the past, one eagle or eaglet was exchanged with one to two sheep (or goats) between falconers. However, it was not a systemised transaction. Many herders are eager to seek eagles now although those are not really skilled breeders, but just eagle owners or demonstrators.

Especially, local eagle traffics with both eaglets and adults were not frequent in the previous times. However, the eagle traffic, especially among poorly skilled breeders, is now becoming normal and puts a significant threat on natural resources, especially on the population of Golden Eagle. It seems to be frequent due to the participation in festivals and the invitation of tourists. Once, a falconer typically caught his eaglet directly from her nest and later lived together to hunt for normally 4 - 5 years. At the end of the 4^{th} – 5^{th} hunting season, falconers had to release their eagle to the mountains in order to let it breed a new generation in the wild. This is because Golden Eagles usually reach their sexual maturity at 4 – 5 years old. Owing to this custom, both eagles and masters were in a positive cycle of coexistence [Soma 2012]. The same situation is seen in Kyrgyz and Arab falconry, in which falconers used to capture “passage birds” in autumn and then released them in the end of the winter. Altaic Kazakh falconers used to obey a long-standing tradition for the capture and release. However, both direct capture and release custom are not carried out anymore. Eagle owners frequently buy an eaglet from local people, and even after five years they would not release it back to the mountains. Some also capture adult and juvenile eagles with a trap. Now, 10 year-old or even older adults are sold to others. Currently, the price of an eaglet before fledging is about 100,000 – 200,000 Tugrik (60 – 120 US dollars). This is generally equal to one to two sheep/goats. The capture and selling of eaglets or adults has turned into a precious opportunity for income. Some locals and herdsmen keep the place of nests secret for this reason.

For the Sagsai case, one-year research (from August 2011 – September 2012) reported replacement of tamed eagles at each falconer’s place (Table 4). Firstly, S-11 captured an

1. A week-old eaglet captured by S-11 (2nd June 2012)

2. A week-old eaglet captured by S-11

3. A mew for a juvenile provided by S-11

4. About 10 week-old juvenile (7th August 2012)

Figure 9. Growth of a juvenile eagle in captivity (S-11) in Western Mongolia.

eaglet from a nest by himself in the middle of May (Figure 9: 1 – 2) because his 12 year-old eagle died in March. S-06 also bought one juvenile eagle in May to exchange with his 13 year-old eagle. S-10 captured two 2 week-old eaglets directly from their nest and tamed them at his house until the end of September (Figure 9: 3 – 4). Later, one was sold to U-07, and the other was sold to Mr. KY (a younger brother of S-11 and an uncle of S-22), both at 100,000 Tugrik. Mr. ER captured a 3 – 4 year-old adult with a trap, and S-21 bought a 6 – 7 year-old adult. On the other hand, S-19 gave up keeping his own eagle because of high maintenance costs. S-08 lost a 5 year-old adult, S-11 lost a 12 year-old adult, and U-07 lost a 1 year-old juvenile because of death. S-08 obtained a 3 year-old eagle which was tamed by S-16 (S-08's relative). Later, S-16 also obtained a new adult from someone else. In sum, exchanges of Golden Eagles from August 2011 – September 2012 resulted in the capture of three eaglets, the acquisition of two, the exchange of five, the loss by death of three, and the sale of three.

Such a replacement frequency is uncertain in other counties nowadays. If careless eaglet transactions are extended all over the Altai territory, the Golden Eagle population will decrease. Reasons for such frequent exchanges are the discontinuity of traditional taming art

and knowledge, as well as the custom of nature guardianship among eagle masters/ owners. It results in frequent sickness or death of eagles. The death of a Golden Eagle from a human standpoint was regarded as abominable in the past. When a tamed eagle died, the master returned the body to the birth mountain and buried it near the top with great care. However, the death and exchange of eagles are now quite frequent and they are never again released into nature. The issue is not eaglet capture and exchange itself but rather the discontinuity of TEK and discipline, as well as guardianship for the protection of nature. Urgent legal and governmental agendas for wildlife preservation, including the trading of Golden Eagles as well as prey animals, are necessary to restrict the abuse of natural resources.

7.3.2. Hunting and Nesting Environment for Golden Eagle Propagation

The cultural sphere of the eagle falconry tradition seems to terminate at the regions of Deluun County in the southern Bayan Ulgii Province. There are only few eagle falconers throughout the southern part. Some local residents at New Bulgan County pointed out that there is no space for soaring before hunting. The terrain of the southernmost Province is more uneven and consists of sequential narrow valleys. In fact, around the Bulgan territory only three eagle owners — who are not engaged in actual hunting — were confirmed in June 2013. This also implies a topographical dependency of eagle falconry in the Altai Mountains.

A primary reason for the continuity of Altaic Kazakh falconry lies in an abundant avifauna, especially in a large population of Golden Eagles in western Mongolia, besides geomorphological characteristics of the Altai Mountains which are suitable for the eagle's nesting and hunting process.

(1) Open-Ground and Treeless Environment for Hunting: Altaic Golden Eagles are adapted to non-forest territories both for hunting and breeding, unlike accipitrine and falconiform. Technically speaking, Golden Eagles are normally open-ground birds that tend to avoid large forested areas [McGrady et al. 1997] so that natural setting and conditions are of utmost importance for falconry survival. An extensive open space and fine-viewed foothills without trees and forests across Altai region present favorable conditions for eagles to dwell and to hunt. Their body size and predatory behaviour are not suited to flying through clusters of trees. Many hawks are believed to perch on a branch of a tree before attacking a prey. However, Altaic eagles need to soar high above before swooping down on their prey. Treeless mountains steeps also provide eagles with the advantage of fine visibility and a convenient view for searching for prey, which is the ecological basis for food availability. As a case in point, most Golden Eagles responded negatively to afforestation on the Island of Mull (Scotland), with breeding success being adversely affected in most ranges where it occurred [Whitfield et al. 2001: 1216]. The craggy surfaces and uneven ground covered with rocky

eaves and caves provide various kinds of hiding spaces not only for foxes, but also for birds, rodents, and other potential quarry prey animals. In addition, extended open foothills contribute to quick prey detection, thus increasing the efficiency of predatory hunting.

Furthermore, there are frequent upward wind currents in the mountains, which are beneficial to raise an eagle's heavy body high into the sky. It is very important for Golden Eagles to soar high before hunting. The initial flight of heavy eagles is quite slow and they do not so much visually entertain audience at sport falconry. In other words, hawks and falcons fly with their wings, while eagles fly with the winds. It is the natural environmental conditions that have made it possible for Altaic herders to preserve and continue eagle-tamed falconry for centuries.

(2) Nesting Environment: The majority of Golden Eagles' nests across the Altai Mountains seem to be placed on cliffs. It is estimated that 80 – 90% of Golden Eagle nests across the Altai territory are built on rocks or cliffs. Out of ten nests found in the territory of Altai Krai (Altai Republic, Russia), nine were built on the cliff and only one on a birch tree [Karyakin et al. 2005: 29]. According to another study in the same area, a total of nine nests were built on the rock and two nests were built in undersized pine trees [Smelansky & Tomilenko 2005: 52]. Even all Saker falcon's nests (n=280) were built on cliffs in the northern Mori-Kazakh County (Xingjian, China) where topography is similar to the Altai regions [Ma et al. 2006: 61]. only 7 (1.3%) nests were located in trees and 506 (98.7%) other nests were found on cliffs (out of the 513 observed nests) in the case of the northern Italian Alps (approx. 8,600 km^2 ranging from the Mediterranean Sea) [Fasce et al. 2011: 584]. Contrary, all Golden Eagle nests were built on trees — specifically on pine and larch in the forestry steppe depressions of the Irkutsk district and the Republic of Buryatia [Karyakin, Nikolenko, & Barashkova 2006: 23]. However, the Altai Mountains do not provide enough big trees for nest building to hide from potential vermin and human intervention. The Sagsai, Tolbo, and Ulaanhus territories in particular provide few forest resources. In addition, trees and forests such as pine and cedar (*Cryptomeria spp*.) are always situated on the northern face of the mountains in the westernmost part of the Altai Mountains, which is near the Chinese border zone around the lakeshore of Hoton-nur, Hurgan-nur, and Dayan-nur.

Traditionally, Kazakh eaglet-capturers always assume to capture an eaglet from a nest on the rocks or cliffs, never think of trees or other nesting place. In the past, an old ornithologist believed that these eagles do not always make their nests in the most inaccessible crags near the mountain top, but sometimes make their nests on comparably low cliffs, usually selecting the ledge of a rock which commands an extensive view over the plains below [Raine 1890: 22]. Thus, ethno-ornithologically speaking, the Altaic Golden Eagles do not tend to build their nest on the top of a tree, at least around areas of the Altai regions where humans live.

In addition, there is a hypothetical idea that Altaic Golden Eagles have well adopted to their living sphere together with local herders. For instance, telemetry data, collected in western Scotland, defined circles of 3 km and 6 km of territorial radius from the centres or eyrie locations. The biggest range was within 6 km of the territory centre, and the core of the territory (50% of activity) was within 3 km [McGrady et al. 1997]. Nevertheless, the active range is highly depending on each area and territory, the 3 km radius may be trustworthy with some other research support [Kochert 1999: 776, 778]. Birds ranged shorter distances in a breeding summer than in winter and in a non-breeding summer, but in general there was no difference in distance ranged between winter and non-breeding summer [Haworth et al. 2006: 269-270]. These eagle's behavior suggest that living sphere of host eagles of nests (N01 – N06) found around the Sagsai centre might be greatly overlapped with human sphere.

In brief, the fecundity of Golden Eagles has an indirect positive influence on other species of raptors in the same living sphere. For instance, some abandoned nests of Golden Eagles and medium and large-sized raptors in the territory of the Kazakhstan and Altai Mountains, — such as black kite (*Milvus migrans*), imperial eagle, and even raven (*Corvus corax*) — were reused by Saker falcons [Karyakin et al. 2005: 30; Karyakin & Nikolenko 2009: 102]. Sakers mainly occupy nests built by long-legged buzzards (57.6%), but also those built by the Golden Eagle (24.2%) along the Sarysu river basin (Kazakhstan) [Karyakin et al. 2008: 61-62]. The Golden Eagle also occasionally (n=1) reused an old nest of the Imperial Eagle in the Altai Mountains [Nikolenko, Vazhov, & Bekmansurov 2009: 129]. Nest building suitability for large-sized raptors will accommodate overall breeding conditions for wild raptors. Therefore, both all of locals and the government should be more conscious that the abundance of large-sized raptors as represented by Golden Eagles indicates a healthy ecosystem of whole range of Altai Mountains.

7.4. Conclusions

Falconry as a Discourse between Human and Nature

Contrary to the positive situation of falconry culture in North America, Europe, and several Arab countries, falconry culture in Japan, Korea and China has been almost totally abandoned in the process of modernization: East Asian falconry has been neither an elaborate activity in the society nor a major cultural or socio-ecological domain despite the origin of this culture was much earlier than of European falconry. Such a cultural decline is also to be seen from the severe decline of Kyrgyz falconry. Through the process of sedentarisation of Kyrgyz pastoral communities, eagle falconry gradually disappeared because of the feeding burden, costs associated with horse ownership, the loss of traditional art and knowledge, and the disappearance of market routes for fox fur trades provided by the hunters association during

the USSR period [Soma 2007, 2008]. The reason for such a discontinuity in Asian falconry can perhaps be ascribed to a lack of socio-ecological reintroduction in consistency with changing social circumstances of a sedentary context. Such cultural alterations from the original context of nomadic animal herding communities are inevitable in the process of sedentarisation. Likewise, falconry culture will never exist in the sedentary world without extensive efforts toward the maintenance of this original institutional adaptation. Thus, a key requirement for the continuation of the falconry tradition is the continuation of internal renaissance powered by bottom-up supports by local people and participants which stipulates to keep the whole practice itself as "in situ" living tradition. Falconry culture will easily disappear from our society if socio-cultural institutions, activating efforts, and maintenance are disregarded. The study of Altaic Kazakh falconry and falconers may somewhat support the idea of a positive correlation between falconers and natural and avifaunal resource management from an ethnographic and ethno-ornithological point of view.

Today, a true recreational value of contemporary falconry is to provide chances and opportunities to let people engage with nature. Falconry culture faced serious declines the beginning of the 20th century. In the case of British falconry, raptor-owners attempted an internal renaissance, even though its social support deteriorated by the First World War [Fuertes 1920: 431]. The situation surrounding falconry in the United States faced same situation, and just only over 100 falconers were active by the late 1930s [Braun et al. 1977: 360]. The growth of falconry was eventually slow in the 1940s and 1950s across the western countries. However, the culture significantly revitalised in the 1960s and early 1970s, when there were an estimated 1,508 active falconers in North America [Braun et al. 1977: 360]. In the first decades of 21st century, there were an estimated 4,250 falconers in the USA. In Britain, about 25,000 people keep birds of prey and 5,000 of them are actually engaged in hunting in 2007 [Fox & Chick 2007: 2]. Even in South Africa, there are some 160 active falconers and about 20 in Zimbabwe [South African Falconry Association (SAFA) 2012]. There are 5,000 Emirati falconers in the United Arab Emirates and the government proclaimed falconry culture as a national cultural domain [Khalaf 2009: 311]. These contemporary circumstances of falconry culture recall the words of the outstanding British ornithologist J.E. Harting: "*We are all hunters by nature. We have an inherent passion for chasing and taking wild animals, and feel an inward satisfaction in outwitting their natural instinct which prompts them to fly from us...*" [Harting 1883: 67]. Falconry can have a recreational and financial value for local communities as a complement to shooting, because it does not extract a large number of game animals nor reduce the number of game animals available to gun hunters [Šegrt et al. 2008]. The words of Thomas Powys (4th Baron Lilford) demonstrated an indicative idea for not only falconry, but hunting/sport activities; "*But I contend that 'sport' may be enjoyed in the highest degree in the pursuit of wild animals by fair means, without the attainment of success in the death of any beast, bird or fish, and that disappointment should only enhance the keenness of the real sportsman*" [Lilford 1903: 98].

The contemporary falconry in the sedentary world ascribes to reintroduction and renaissance of enterprise based on nomadic animal herder's context in order to set up own socio-cultural institutions. Such successive fitting procedures "Inner Renaissance" are necessary to foster the continuation of falconry culture. Sedentary falconry is different from all other kinds of modern sporting activities because of its complexity in the care for hunting birds and the maintenance of natural resources, like the population of quarry, hunting fields, and raptors' nesting environment. Much can be learned from British falconry, which started to decline in the late 17th century [Grassby 1997: 50]. As was described in the *All Round Sport with Fish, Fur & Feather* (1886) [Dykes 1886], new activity fields such as shooting, fishing, golf, cricket, yachting, etc. were preferred by the ladies and gentlemen from the late 18th century to the middle of the 19th century. Falconry became a minor activity until the beginning of 19th century, contrary to many (re)printed handbooks describing "how to enjoy sports" and "sports experiences" during the Victorian Age (such as *Rural Sports* [1801], *Instructions to Young Sportsmen* [1859], *Sport & Sportsmen: A Book of Recollections* [1866], *Sport at Home & Abroad* [1872], *Forty-five Years of Hunting* [1891]). From a social standpoint, one of the main reasons for this decline was the necessity of financial retrenchment in both court and household [Grassby 1977: 51]. From an ecological standpoint, the enclosure movement to reform wild land and hunting fields into agricultural land use in British rural places also brought about negative effects for British falconry [Harting 1864: 49-50]. From a practical standpoint, hawking was abandoned due to the trouble and expense of keeping and breeding a hawk and the difficulties related to its management in the field [Jacob 1718: 29]. Therefore, systematic support and standardisation, especially the preservation of the natural environment with enough land and prey resources, are essential requirements for the continuation of falconry culture into the future.

From the early stage of contact between humans and raptors, falconry was considered a precious opportunity to know nature and the environment extensively through Traditional Art and Knowledge (TAK) of taming and hunting practices and philosophy. Each of the six volumes of *De arte venandi cum avibus* point out that the art of falconry is not just about the prey and hunting, but most of all man has to understand and respect the beauty of nature [Fišerová 2010: 291]. In fact, there is an opinion that falconry and falconers had a negative impact on environmental destruction such as in Baluchistan in southern Pakistan [Mian 1986]. However, the problem can be ascribed not to falconry itself, but to a lack of physical activation of resource management and regulation of hunters' behaviour at the hunting areas. Many substantial contributors to raptor biology in 1970's had either been falconers or were sympathetic to the sport and its followers [Cooper 1984: 5]. Expertise possessed by falconers is highly beneficial for environmental conservation. Collaboration between aviculturists and falconers may prove beneficial if advice is needed on nest box design or on methods of captive breeding or release [Cooper 1984: 3]. For example about the clutch management, if the first clutches (laid eggs) are removed from nests and then artificially incubated, afterwards

second clutches will be produced again in the wild [Braun et al. 1977: 364]. Expert falconers can contribute to keep alive a higher percentage of pre-adult birds of which the survival ratio is higher in captivity than in the wild state, and one may expect twice as many birds if they are released [Cade 1974]. According to analyses by Braun et al. [1977: 360], the use of raptors in falconry will not have any negative effect on the raptor population, especially in peregrines. Kenward [2009: 190-192] also pointed out that wild peregrine populations tend to be highest in the countries with the largest number of active falconers, and concluded that it may be that falconry in Europe would contribute more to conservation if more raptors were harvested from the wild. Nowadays new attempts have been made for the introduction of falconers for dispelling birds to avoid bird strikes at JFK International Airport (USA) and Deblin Airfield (Poland) [Battistoni et al 2008; Kitowski et al. 2011]. In addition, a very low infection risk of Avian Influenza Virus (AIV) for falconers and their birds was testified by German falconry [Kohls et al. 2011], which might lead to new contributions by falconers in the research of AIV propagation. Falconry has been opening a new chapter towards a higher integration of Human-Animal Interactions in society.

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8 General Discussion and Conclusion

Falconry as a Gift of Human-Raptor Harmony

8.1. Introduction

Safeguarding Falconry Culture with Local Resilience

Previous chapters described the socio-historical formation process of Altaic Kazakh falconry which has been based on a very fragile balance of inter-dependency between cultural continuity, socio-ecological livelihood, and natural resources (Figure 10). Overall, negative results (NR01 - 05) so far observed will bring about further negative effects (NE01 - 05) for local falconry:

NR01: Disappearance of Traditional Arts & Knowledge
= NE01: Frequent death of tamed eagles

NR02: Abandonment of Hunting Practices & Experiences
= NE02: Alteration into demonstration & touristic purpose

NR03: Detachment from Animal Husbandry Livelihood
= NE03: Increased maintenance & feeding burden

NR04: Transaction of Eaglets & Adult Eagles
= NE04: Threat on the population of Golden Eagles

NR05: Disappearance of Local Elders
= NE05: Accelerating decline of TAK and its succession

Various preservative actions have been delineated in this thesis. Thus, overall results from this research stress on not only a singular direct action, but also indirect contributions (IC01 - 04) which create a status of “in situ” or “on-going” living intangible heritage with:

IC01: Social constitution for cultural proprietorship:
for strengthening the community and/or
for nationwide notion-building as national heritage

IC02: Improving/ sustaining transhumant animal herding livelihood:
for an essential economic basis to facilitate overall eagle ownership

IC03: Natural resource management/ protection:
for securing the propagation of Golden Eagles and animal resources

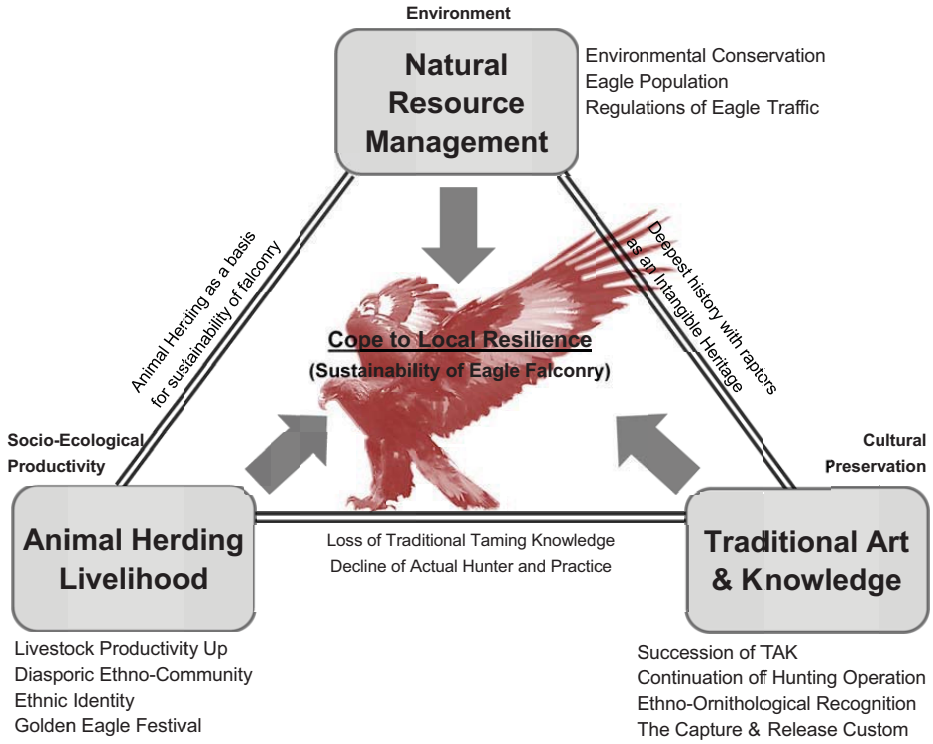

Figure 10. The sustainable model for cultural preservation of Altaic Kazakh falconry

IC04: Continuity of fox-hunting:
for reduction of eagle maintenance costs
for continuity of TAK in each stage of taming and hunting

All of these preservative components need to be integrated into a sequential process cooperatively in order to drive social resilience. In this thesis, each study package was dedicated to a specific objective to create a principle academic basis for cultural resource management (Figure 10).

8.2. Insights gained from Part I:

Ancient History of Asian Falconry

Part I (incl. Chapter 2 & 3) aimed at a theoretical contribution to define Asian falconry culture as a distinctive intangible heritage in human history. To achieve this primary objective, archaeological evidence was investigated to provide a certain scale of culture-historical depth

of Asian falconry and its proto ethnography as systematic studies are lacking yet. This part, mainly designed within a framework of ethno-archaeology, has revealed the classical format of falconry across ancient East and Central Asia.

Chapter 2 tried to define the historical depth of Asian falconry culture from the perspective of Human-Raptor Interactions (HRI). Plenty of archaeological evidences (Case NA01 - NA15) revealed three traits of earliest HRI: (1) Historical depth of falconry which dates back to approximately 2,300 years ago from ethnoarchaeological analyses, (2) Proto-ethnography and initial format of North Asian falconry which was characterized by the horse-mounted, and right-handed perching style, (3) A potential cultural linage of falconry which has strong affiliation to the Asian highland and steppe territory, the so-called “nomad’s territory”. Thus, this chapter concluded that falconry, so to speak the “taming of predatory birds”, has been deeply anchored in the cultural context of animal herding livelihood from its beginning. Specifically, the presence of horse-mounted falconer figures in the Tienshan regions strongly supports its long historical depth which has been transmitted over generations in Kyrgyz and Kazakh societies at least from the 7th century onwards.

Chapter 3 clarified the earliest style of falconry custom in ancient China and Japan, and illustrated cultural differences between North and East Asian practice. Only 9 archaeological materials (Case EA-01 – EA-09) depicting figures of falconers are currently available providing precious information to understand the ancient context of East Asian falconry. It probably started in China during the Later Han Dynasty ($_{A.D.}$ 25 - 220), and later in Japan during the middle of Kofun Period (ca. the end of 6th century). This origin might be 600 - 700 years earlier than European falconry. Ethnoarchaeological interpretation suggested that some cultural alterations inevitably occurred in the process of reintroduction of falconry into the sedentary context with: (1) Falconry dismounted, (2) Left-handed style, (3) Selection from small size birds of prey (abandoning large sized raptors), (4) Introduction of hound dogs as beaters, and (5) Social institution and regulation against free participation to falconry. The major part of todays’ well-known “game” or “sports” falconry thus has been formulated during this period with some technical reformations from nomadic pastoralist’s taste of falconry.

The primary objective of Part I (historical investigation section) was to (re)evoke the significance of the century-lasting historical depth of falconry culture. No matter whether “cultural diffusion” or “independent occurrence”, the prototype of the horse-mounted falconry in Kyrgyz and Kazakhs has been practiced not later than 1,300 years in pastoralist societies [for the answer to the hypothesis HY01]. In addition, the section specified the importance of acculturation from nomad’s taste “the horse riding falconry” into the “sedentary falconry”. These chapters also revealed a cosmopolitan feature of falconry culture; the former, the classical falconry, was done for practical functions in casual herder’s livelihood, and the latter, the sedentary falconry achieved more sophistication for the sake of entertainment and royalty of the socially higher strata. Historical investigation of falconry culture is therefore important

not only to trace back the physical expansion of the culture itself in the ancient world, but also to specify the derivation of cultural meanings in the history of Human-Raptor Interactions.

8.3. Insights gained from Part II:

Ethnographic Narrative of Altaic Kazakh Falconry

Part II (incl. Chapter 4 & 5) documented concrete ethnographic information of Traditional Art and Knowledge (TAK) on practical handling in taming, training, and hunting by Altaic Kazakhs. One main task of this part was to create a universal ethnographic narrative based on actual documentation of the indigenous reclaiming process. This is also a current urgent necessity against the complete disappearance of actual hunters and experienced elders from the community. Ethno-ornithological perspectives and comparative analysis with medieval British falconry provided a core discourse for the analysis and interpretation of actual ethnographic phenomena and the rapport-making process between the master and the captive eagle. This part also illustrated the current ambivalent situation: on the one hand the recent cultural upheaval based on ethnic identity, but on the other the substantial decline of TAK and hunting activity in the original context of indigenous falconry.

Chapter 4 described TAK along with each reclaiming stage of capture, perch, feeding, and training by participant observation in Sagsai County. The general ways of rapport-making were recorded in reference to actual handling by 23 informant eagle masters (S-01 – S-23). This chapter also introduced a variety of indigenous ethno-ornithological recognitions about body parts, age-specific names, and ritual or mental attachment during each taming stage. A set of concrete reclaiming manners was described together with the utility of falconry equipment (Figure 26 - 40) the characteristics of which reflect an indigenous uniqueness. These ethnographic analyses pointed out some distinctions of Altaic Kazakh eagle masters: (1) Single selection of hunting bird, (2) Feeding burden for hunting eagles, (3) Work-saving communication with captive eagle in during spring and summer season. A series of comparative analyses with the classical British falconry clarified the meanings of these local traits in the world-wide falconry context [for the answer to the hypothesis HY02]. Especially, during spring and summer (from March to August) the master and his eagle have sparse contact such as a “the neutral term” or “taming-off season”. The masters never let hunting eagles fly even one time during this period. This suggests a clear demarcation between “the hunting on-season” and “hunting off-season” of which coincides with vocational-separation between a herder and a falconer. An effortless communication in spring and summer should have allowed herders to concentrate on animal husbandry works. This is considered as one of the inevitable conditions to support centuries-lasting continuation of falconry tradition in an animal-herders society.

Chapter 5 described the contemporary situation and techniques of actual hunting operation by Altaic Kazakhs characterized by (1) The decline of hunting activity and hunter population, and (2) A diversification of hunting ways, such as the burrow hunt, trace hunt, trap hunting. A serious hunting excursion is now practiced by only a few masters across western Mongolia. Through participant observations, concrete excursion routes and hunting points, distance and duration of daily excursions were specified together with local hunting styles such as a cooperative work with beaters. The decline of hunting practice was attributed to several reasons such as the decrease of fox and prey animal population, expansion of trap hunting and gun shooting, and physical burden of hunting activities. Not only hunters but also beaters, inevitable hunting cooperators, tend to avoid such a physical burden. In addition, the harvest from actual falconry activity is not as fruitful as before. In consequence, rather the cultural and symbolic side of falconry culture has been stressed in the local community. This kind of "decontextualisation" of living tradition is one of the major concerns now endangering the status of Altaic Kazakh falconry.

An accumulation of ethnographic information contributes to either precious documentation or asset for deeper understanding of the current status. Overall, Part II (ethnographic documentation section) was particularly concerned about the negative sides of current status of falconry characterized with oblivion of TAK and hunting activity. Continuation of hunting should be one of the lifelines for sustaining this culture due to the fact that all reclaiming processes of captive eagles are dedicated to productive hunting with healthy birds. Therefore, this section concluded that a continuation of hunting practices will be only way to conserve eagle falconry as an "in situ" living intangible heritage in contemporary social context.

8.4. Insights gained from Part III:

Cultural Sustainability of Eagle Falconry

Part III (incl. Chapter 6 & 7) made theoretical and empirical suggestions to create criteria for cultural suitability of Altaic Kazakh falconry, based on social research into recent socio-cultural movements, and the social ecosystem basis of eagle falconry.

Chapter 6 reported on current socio-cultural revitalization of falconry culture which is becoming an axis of ethnic identity for community unification. This chapter analysed socio-cultural impacts on local falconry and falconers that ensued from 10 years of "The Golden Eagle Festivals", the most successful ethnic event by Kazakh youth in western Mongolia. The Golden Eagle Festivals became an axis of cultural alteration of falconry tradition at last. It is one significant event for ethno-cultural demonstration of Altaic Kazakh community, despite accelerating "decontextualisation" of local falconry tradition with disregard of TAK,

discontinuation of hunting practice, abandonment of capture and release customs, and increased eagle trafficking. There are two major negative impacts: (1) Alteration from serious hunting arts into “demonstrative ostentation” for tourists, and (2) Absence of local residents in the festivals as stakeholders [for the answer to the hypothesis HY03]. The festivals have indeed become a central opportunity to preserve local falconry culture with demonstration at festivals for tourist visitors. Many Altaic Kazakh falconers just became eagle-owners although they pretend to be “the authentic eagle master” – but they neither possess TAK nor serious hunting experience. This chapter (re)evaluated the uniqueness of TAK created by local axiological view point of eagle masters themselves. It was concluded that the Golden Eagle Festivals need to create stronger involvement of local residents as cultural supporters. This will evoke an affirmative “ex mero motu” internal resilience for cultural preservation.

Chapter 7 briefly discussed the social and ecological basis of eagle falconry culture which is regarded as the fragile foundation for its further sustainability. As to the social side, transhumant animal herding economy was identified as a decisive prerequisite to secure the ecosystem of local falconry. The herding livelihood secures feed flesh for hunting eagles so as to potentially reduce the expenditures for eagle ownership. With reference to total livestock possessions and annual birth rates at 125 herder HHs in the Sagsai territory, minimum livestock possession to secure eagle-ownership was estimated at 100 adult sheep or goat (including cattle) [for the answer to the hypothesis HY04]. This socio-ecological condition entails a vocational demarcation both as a herder (= the hunting on-season) and as an eagle master (= hunting off-season). The results support the importance of indirect actions for preservation such as efficient husbandry skills to promote herd productivity at each falconer’s household. Another essential point is that animal herding lifestyle will reduce costs for horse ownership. Reducing wealth inequality would raise the bottom line of social economics which is primarily created by the traditional inheritance system of “ultimogeniture”.

As to the ecological side, this chapter also described current eagle traffics among local falconers, and argued for urgent natural resource management. Even if a complete picture of eagle traffics across western Mongolia is lacking, if reckless eaglet transactions are expanded all over the Altai territory, the influence will appear shortly with the decline of eagle population. One reason for such frequent exchange of eagles ascribes to the discontinuity of TAK, and oblivion of guardianship for natural resources among eagle masters. This situation brings about frequent sickness, death, and transaction of hunting eagles among community members. Captive eagles are also not released again to nature nowadays. Urgent legal and governmental action is required for wildlife preservation to restrict the abuse of natural resources against reckless exploitations.

Part III (cultural preservation section) suggested both direct and indirect actions in three stages: culture, society, and ecology. This part thereby warned against any simple “giving-support” such as compensation, subsidy, monetary donation provided by local governments.

This will not have positive effects on eagle owners, rather devastate massively and irreversibly the local falconry culture due to potential abuse of the welfare system by local residents. The chapter argued to revive a sense of local guardianship for natural resources including avifauna. This was seen as a means to stipulate the maintenance of TAK and "the Capture and Release Custom", as well as to prevent reckless eagle traffics. However, all need to activate own strives by local Kazakh people and nation-wide cultural supporters. Since Altaic Kazakh falconry is based on the fragile interdependency between culture, society and ecology it is an unreplaceable cultural landscape untouchable from outside.

8.5. Further Hypotheses

Positive Correlation by Human Intervention

The series of ethnographic studies in this thesis leads to further hypotheses. The rapport-making process between the master and the Golden Eagle points to a positive correlation "the coexistence cycle model" which allows interactive co-existence in the endemic environment of the Altai Mountains. Every corner of reclaiming customs provides enough clues to establish a cultural background and theoretical basis for "the coexistence cycle model" between humans and eagles. Briefly speaking, potential contributions or physical/psychological reformation of Golden Eagle's life are expected from each stage of falconer's taming disciplines: (1) **Capture**; survival of brother (sister) eaglets, (2) **Feeding**; a wide range of dietary preferences and availability, (3) **Training**; development of hunting skills and techniques, and (4) **Manning**; acquisition of non-humanphobic characteristics in nature, (5) **Release**; efficient breeding by "well developed" eagles. Through "the capture and release custom", Altaic Kazakh eagle masters have consciously and/or unconsciously contributed to increase the wild eagle population during century-lasting contact.

(1) Capture - Survival from Siblicide (Cainism/ Fratricide): In the case capture of eaglet has been more active for many centuries, Altaic Kazakh falconers may have contributed to raise juvenile and pre-adult Golden Eagles' survival and reduce the mortality ratio due to avoidance of "*Siblicide (Cainism/ Fratricide)*", the brother/ sister-killing phenomenon. Because falconers generally chose a bigger female eaglet (eyas) at her aerie if more than one eyas are inside. Siblicide is quite common in the raptor world. An elder eaglet kills its younger siblings by attack or pushing them out of the nest. In the case of Japanese Golden Eagles, the survival ratio of the second or third one until full fledge is only 1 - 3% (only n=3 of 179 cases survive). A killed chick is often eaten by other siblings, or given to others by their parents [Tordoff 1998: 184]. In May 2012, S-10 and S-11 caught eaglets from their aerie. The eaglets grew up under

conscious care by the masters. Still, further ornithological observations are necessary to testify if the classical discipline of the capture and release custom contributes to eagle propagation and potentially reduces the mortality rate of pre-adult Golden Eagles by means of reducing siblicide.

(2) Feeding Contacts – Widen Palatability of available Feed: The daily diet served by her master may enhance the eagle's dietary breadth both in human and natural sphere. The usual diet of the Golden Eagle is highly dependent on fresh meat hunted in the wild. However, tamed eagles adapt to eat various kinds of dietary flesh, including even cooked meat or scavenging [Capter 4.5.2. Feeding Tasks]. It was never heard that Golden Eagles predated on domesticated animals. However, sheep wool was observed at their aeries. It is likely that eagles also eat dead livestock or those killed by wolves. Eventually, dietary spectrum may be developed much wider than wild-bred eagles and raise individual natural survivability of tamed eagles after released.

(3) Training - Becoming a Skillful Hunter in Wild Life: It is highly likely that trained eagles will become very skillful hunters. According to the strict traditional program for daily training, hunting, and subordination, it will keep a high hunting ability even after release back to nature. Golden Eagles in natural state occasionally become less active in hunting and rely on effortless prey animals such as tortoise [Capter 4.4.1. Golden Eagle of Altai Mountains]. However, daily training and hunting tasks will stipulate an inherent docility and drive their aggression against various hunting targets. The hunting frequency of native Altaic Golden Eagles is unclear. For instance, the wild Goshawks in Sweden have a hunting cycle in which predation is done every 4 - 5 hours on average [Kenward 1982: 69-80]. But falconers probably let their bird fly and hunt more often than they do in the wild state. Capturing a fox also will not be frequently happening in nature. Most of the eagle's diet consists of lagomorphs, birds and small mammals in general. In old times, eagle masters very frequently went fox-hunting every 2 - 3 days and some went every day. In these cases the hunting ability of tamed eagles was presumably highly developed and strengthened during their life with their masters. Consequently, the captive condition resulted in a higher productivity of their hunting behavior even after release, an attitude granting more stable feeding of new born eaglets in the wild.

(4) Manning - Acquisition of "Non-Humanphobic" Characteristics after Released: Once eagles are accustomed ("manned") to the human living sphere they presumably acquire a "non humanphobic" nature after release to the wild. Even though large-sized eagles seem more sensitive to human influences, released eagles seemed not to too much afraid of human activity even in their habitat territory. Golden Eagles are threatened world-wide, mostly

because of human interference and overlapping of human and birds' living spheres. Their density is negatively related to crop fields, roads and power lines [Sánchez-Zapata et al. 2003: 71-77]. However, in the Altai they often share their territory with humans, building their aeries very close to villages and herders' settlements [Capter 4.4.2. Capture of Eaglet]. It is not sure whether these nests were built by a tamed or non-tamed eagle. However, there were plenty human artefacts found inside the nests, such as gloves, wire, bags, and belts. It can be assumed that the local nesting conditions in the vicinity of Sagsai well accustomed local eagles to human presence and they gained a "non-humanphobic" attitude that may be transmitted over generations. Consequently, Altaic Kazakhs and Golden Eagles might have been sharing their living spheres for centuries.

(5) Release - Propagation of Golden Eagle Population: Eagle masters used to release their hunting eagles to nature after they reached 4 - 5 years old in old times, so that the above described human-raptor interactions in Altaic Kazakh falconry might have contributed to efficient eagle propagation. This sequential positive interdependency would never have been activated without the local "the Capture and Release Custom" (1. Capture, 2. Feeding, 3. Training, 4. Taming, and 5. Release). Generally speaking, "Traditional Ecological Knowledge (TEK)" and "Local Ecological Knowledge (LEK)" possessed by tribal communities and/or indigenous people are very rarely integrated into modern wildlife management and protection of avifauna, due to its qualitative propensity [Bonta 2010: 13; Gilchrist et al. 2005]. However, falconers have naturally been outstanding experts in capture and breeding techniques of birds of prey from ancient times [Ford 1982: 158-161], rather than contributing in their threat such as dealers, shooters and illegal hunters. Falconry and falconer's use of raptors has not had negative effects on bird populations (especially concerning the Peregrines) [Braun et al 1977: 364]. Rather, Kenward [2009: 190] mentioned the human contribution to the maintenance of wild peregrine populations which tend to be highest in countries with the most falconers. In conclusion, the capture and release custom is the central axis of the cycle of the coexistence of the masters and the eagles. In consequence, Altaic Kazakh falconers consciously and/or unconsciously contributed to the propagation of Golden Eagle in the Altai Mountains [for the answer to the hypothesis HY05].

8.6. Final Remarks:

Modern falconry practices provide a precious chance and opportunity for close engagement with the natural world which is often alienated by contemporary livelihood in most societies. As concerns cultural sustainability, a close human-nature contact such as in falconry activities is considered to be of true recreational value. From the beginning of falconry history, TAK and

the total manning process of captive eagles gave a precious opportunity to recognize an interaction between human and wild nature extensively. Altaic Kazakh falconry keeps up the original context of Asian falconry as a form of living heritage, based on the fragile balance between transmitted TAK (culture), transhumant animal herding livelihood (society), and natural resources (ecology). However, a simple cultural constitution or emotional bond for symbolization without acts will only contribute little fundamental cultural sustainability. This research clarified that falconry culture needs to be revised and reintroduced to particular social and ecological circumstances that are changing in the process of modernization, especially in the sedentary world. This thesis concludes that "three threads" (culture, society, and environment), have to be carefully but firmly interwoven to stand out as a picture of "horse riding eagle falconry" on the cultural tapestry of Altaic Kazakhs in western Mongolia. It is therefore possible to define that the falconry culture is "*The Heritage of Human-Animal Harmony*" in terms of a huge volume of derivative OUV in human history developed from cultural domains of HRI. In addition, falconry activity, characterised by its cosmopolitan features and Eurasian-wide expansion, was always carried out without any borderline between "herdsmen (nomadic)/agrarian (sedentary)", "Islam (Arab)/Christianity (Europe)", "human sphere/wild nature" and "ancient (then)/contemporary (now)". There is a remarkable prediction about falconry by J. P. Hamilton in the Victorian Age that "*I entertain a sanguine hope that the time may yet arrive when this manly field sports (falconry) may once more be revived, the mania of battue shooting be considerably diminished, which really had little to recommend it*…" [Hamilton 1860: 205]. Further studies of Altaic Kazakh falconry and eagle masters will strengthen cultural sustainability and lasting Human-Raptor Interactions (HRI). It is surely beneficial to all falconry culture in this world and its context in human history.

8.7. References

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Part II

* All items were observed at eagle master's households in the Sagsai territory (in 2011). Figures were redrawn from photographs taken by the author.

Part III

This research project focuses on contemporary eagle-taming falconry practice of the Altaic Kazakhs animal herding society in Bayan Ulgii Province in Western Mongolia. It aims to contributing both theoretical and empirical criteria for cultural preservation of Asian falconry. This cultural as well as environmental discourse is illustrated with concentrated field research framed by ecological anthropology and ethno-ornithology from the viewpoint of “Human-Animal Interaction (HAI)” and “Human-Animal Behavior (HAB)”.

Part I (Chapter 2 & 3) explores ethno-archaeological and ethno-ornithological dimensions by interpretive research of archaeological artefacts which trace the historical depth of Asian falconry culture. Part II (Chapter 4 & 5) provides an extensive ethnographic narrative of Altaic Kazakh falconry, which is the central part of this research project. The “Traditional Art and Knowledge (TAK)” in human-raptor interactions, comprising the entire cycle of capture, perch, feeding, training, hunting, and release, is presented with specific emphasis on its relation to environmental and societal context. Traditional falconry as integral part of a nomadic lifestyle has to face some critical problems nowadays which necessitate preventing the complete disappearance of this outstanding indigenous cultural heritage. Part III (Chapter 6 & 7) thus focuses on the cultural sustainability of Altaic Kazakh falconry. Changing livelihoods, sedentarisation, and decontextualisation are identified as major threats. The role of Golden Eagle Festivals is critically analysed with regard to positive and negative impact. This part also intends to contribute to the academic definition of eagle falconry as an intangible cultural heritage, and to provide scientific criteria for a preservation master plan, as well as stipulate local resilience by pointing to successive actions needed for conservation. This research project concludes that cultural sustainability of Altaic Kazakh falconry needs to be supported from the angles of three theoretical frameworks; (1) Cultural affairs for protection based on the concept of nature-guardianship in its cultural domain, (2) Sustainable development and improvement of animal herding productivity and herder’s livelihood, (3) Natural resource management, especially supporting the population of Golden Eagles, their potential prey animals, and their nesting environment.

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