

Intergroup conflict in human evolution

-Focusing on the parochial altruism model-

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Intergroup conflicts in human evolution: A critical review of the parochial altruism model

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The evolution of altruism in human societies has been intensively investigated in social and natural sciences. A widely acknowledged recent idea is the “parochial altruism model,” which suggests that inter-group hostility and intragroup altruism can coevolve through lethal intergroup conflicts. The current article critically examines this idea by reviewing research relevant to intergroup conflicts in human evolutionary history from evolutionary biology, psychology, cultural anthropology, and archaeology. After a brief introduction, section 2 illustrates the mathematical model of parochial altruism and some critiques of the model and its interpretation, primarily from an evolutionary biology point of view. Section 3 delves into the archaeological evidence of prehistoric intergroup conflicts in the Japanese archipelago’s Jomon and Yayoi periods, Europe’s Mesolithic period, and North America’s Pacific period as counter examples of the parochial altruism model. In section 4, the ethnographies of intergroup relationships and conflicts reveal that intergroup relationships in many ethnic groups are not as simple as the assumption in the mathematical model of parochial altruism. In section 5, we outline psychological research on intergroup conflicts which suggest that intergroup hostility and ingroup altruism are not necessarily correlated. In conclusion, we argue that the assumption and parameter settings of the parochial altruism model are inconsistent with empirical data.

Key words: parochial altruism, intergroup conflict, conflict resolution, warfare

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1. introduction

It is a physical phenomenon (Sagawa, 2019, p. 221).

The Daasanach encouraged young men to go into battle.

The Daasanach are also relatively fond of participating in battles.

Daasanach man describes it as “boy’s period”

It would be fair to say that this is an ethnic group that tends to

When everyone reaches a certain age, they become jealous of their peers.

(eg, Sagawa, 2011, 2019). Take these ethnic groups as an example.

This is an opportunity for me to goof off1), and I use it as my own.

He claims that “humans are creatures that like to fight.”

It cannot be avoided by will. When a woman becomes sexually mature

It is easy to do so. Until now, Yanomami and Dani

When you reach maturity, you automatically menstruate and shed blood.

These ethnic groups are examples of such “belligerent” ethnic groups.

In the same way, men who have reached sexual maturity are

Since ancient times, humans have been prone to intergroup conflicts.

It is “natural” to go to the battlefield and shed blood.

Allegations that there has been an intergroup conflict

It has been considered as one of the grounds for (eg, Diamond, 2012;

Keeley, 1996)

However, the belligerence of one group may

Although it may directly lead to conflict with the group,

Not really. Relationships between groups are more complex.

1) Guoff is explained as follows. “What is Guoff?

Dan is a small object in the stomach, and it relieves anxiety about the battlefield.

The idea is to “resolve them and send them to the battlefield.”

“In other words, by going around the upper body of Guoff, there is no unnecessary Go straight towards the goal you want to achieve without thinking about it.” (ibid., p. 219).

Maybe.

...The Samburu and Pokot enjoyed a peaceful relationship, sanctioned by ritual, for more than a century until conflict erupted in 2006, following a war so long ago that few people today remember it. One neighbor is the Turkana, with whom the Samburu has had frequent conflicts...The Samburu and Turkana have a positive relationship during peacetime. Samburu and Pokot, on the other hand, had a "recognized friendship" through the performance of rituals, so even though there was actually a tense relationship between them, this was not the case. They were left alone and each developed a rather negative attitude toward the other (Holtzman, 2016, pp. 167–169).

Even if a conflict occurs between groups and a certain number of victims occur, this may not indicate sustained conflict between groups (eg, Kurimoto, 1999). Conversely, even if some kind of conflict does not occur, a state of tension may persist between the two groups. With these points in mind, it is necessary to carefully handle various related data. This may especially be the case with archaeological evidence, which plays a central role in discussions of past behavior. This is because behavior cannot be directly observed, so inferences must be made by synthesizing various evidence.

This paper introduces and examines discussions in various fields regarding intergroup conflict. Of particular interest is a model called "parochial altruism." Cooperation and altruism are the basis of human society, and research into how these traits, which do not seem to evolve through natural selection, evolved has become a focus not only in psychology but also in economics and science. Progress is being made involving the fields of sociology and even the natural sciences. This model of "parochial altruism," mainly advocated by economist Samuel Bowles, evolves when intergroup conflicts combine altruism toward the in-group with hostility toward the out-group. This model has attracted attention in a variety of fields, including a special issue in *Frontiers in Psychology*, and research is accumulating. Therefore, in this paper, we introduce knowledge from various fields regarding parochial altruism, as follows.

I will intervene. (1) First, in Section 2, we will outline the mathematical model proposed by Bowles et al. and discuss the debate surrounding the model itself. (2) The evolutionary model of parochial altruism finds its basis in archaeological and anthropological data²⁾ regarding intergroup conflicts in prehistoric times. Therefore, we will examine to what extent this model can be supported based on data on intergroup conflicts in prehistoric times (Section 3). Furthermore, since various studies have been accumulated in psychology and cultural anthropology regarding (3) intergroup conflict, we will briefly review the current status of these as well (sections 4 and 5). In conclusion, I argue that evidence that contradicts the parochial evolutionary model of altruism has been obtained in various fields, and that it is difficult to support this model in its current state. In this paper, the second section was mainly written by the second author, the third section by the third and first author, and the rest by the first author, but the overall content is based on discussions between the three authors. There is.

2. Bowles et al.'s evolutionary model of parochial altruism

The theoretical foundation of "parochial altruism" is a series of mathematical models by Samuel Bowles (Bowles, 2006, 2009; Choi & Bowles, 2007). In particular, the model of Jung-Kyoo Choi and Samuel Bowles plays a central role (Choi & Bowles, 2007). This model has already been explained in Japanese by Bowles and Gintis (2011) and Tamura (2020). Therefore, in this paper, we will keep the introduction of the model to a minimum and focus on subsequent developments and criticisms.

First, we will provide an overview of Choi and Bowles' (2007) model. This model shows that "parochialism" and "altruism," two traits that are thought to be difficult to evolve independently, can coevolve under conditions where intergroup conflicts occur frequently. There is. The model assumptions are as follows. Individuals

2) In this paper, research that primarily deals with prehistoric culture is considered archaeology, and research that deals with the culture of more recent traditional societies is considered (cultural) anthropology (as a subfield of American anthropology).

For the time being, I do not envision its positioning as archeology.)
3) Like many evolutionary models, Choi and Bowles (2007) calls all individuals grouped together a population, and the individuals living together who frequently interact within that population. It is called a subpopulation. In this paper, for overall consistency, this subgroup is referred to as a group.

They live separately. Each individual has two traits: altruism and parochialism. Regarding "altruism," there are individuals who are "altruistic" and individuals who are "selfish," and regarding "parochialism," there are individuals who are "narrow-minded" and individuals who are "tolerant." Since there are two types of each of the two traits, there are four types of strategies: "narrow-minded and altruistic," "tolerant and altruistic," "narrow-minded and selfish," and "tolerant and selfish." It turns out. The fitness of each individual is determined by the public goods game within the group and by conflicts between groups. Individuals who are "altruistic" cooperate in the public goods game, while individuals who are not altruistic do not cooperate. Groups may form pairs and some kind of interaction may occur. This intergroup interaction will be peaceful if there are many "tolerant" individuals, but if there are many "narrow-minded and altruistic" individuals, it may lead to conflict. When a conflict occurs, among paired groups, the group with more "narrow-minded and altruistic" individuals has a higher probability of winning the intergroup conflict. Like many evolutionary

models, it assumes that individuals with higher gains are more likely to leave behind copies of themselves. Normally, individuals within a group that will leave copies to the next generation are determined based on the results of a public goods game within the group. However, a certain percentage of individuals belonging to the losing group in a conflict end up copying the strategies of the winning group. Due to the structure of the model, if only the public goods game within the group is considered, individuals who behave "altruistically" cannot evolve because their payoff is low. However, this paper argues that the presence of conflicts between groups makes it easier for groups with altruistic individuals to survive, and that altruism and parochialism co-evolve. . Since the

publication of this paper, various extensions and criticisms have been made. For example, Hannes Rusch argues that models of "parochial altruism" published between 2003 and 2011, including Choi and Bowles (2007), do not sufficiently take into account (i) friendly intergroup relations⁴ , (ii) individual differences, (iii) differences in offense and defense, (iv) intergroup conflict between pairs, and (v) gender differences (Rusch, 2014). Let's briefly introduce each of them. Groups do not necessarily have hostile relationships.

Also, a group that is likely to lose in battle may pay the other party to overlook it. This is what (i) friendly group relations refers to. (ii) Individual differences are a criticism of the fact that the benefits of winning an intergroup conflict are fairly distributed among the entire group. Acquired resources are not always public goods, and it may be more realistic to divide the acquired resources among only the individuals who participated in the battle. In such cases, participation in combat may no longer be an altruistic act. In Choi and Bowles' (2007) model, combat has a completely symmetrical structure, but in reality this is often not the case. This is the case when one side invades another to plunder resources. In this case, the attacking side does not lose resources even if it loses the conflict, and it may be normal for the defending side to have more people participating in the battle than the attacking side. This is what is meant by (iii) the difference between offense and defense. (iv) Conflicts between groups in pairs are, in previous models, assumed that, for example, after an intergroup conflict, a third group attacks a weakened group, or that the proliferation rate of the group participating in the conflict is low. Temporary decreases are not taken into consideration. Also, options such as surrender or a peace agreement are not considered. (v) Although the existence of gender differences in war and the lack of gender differences in altruistic behavior have been repeatedly observed, they are not taken into account in parochial models of altruism. These criticisms argue that the assumptions of parochial altruism models do not correspond to reality.

There is.

Other criticisms include the robustness of the results rather than the model assumptions . Dyble (2021) reproduces the model of Choi and Bowles (2007) and considers a wider range of parameters than the original study. As a result, although the result that altruistic behavior evolves through intergroup conflict is robust for many parameters, the results differ for three parameters: group size, migration rate, and lethality rate in intergroup conflict. It has been reported that this has a significant impact. Altruism is difficult to evolve when group size is large, migration rates are high, and the mortality rate of individuals who participate in intergroup conflicts is high and the mortality rate of individuals who do not participate is low. A narrow range of

parameters that yield the "expected" results does not directly mean that the model is unreliable. If you can get the "expected" results with parameter values that correspond to reality, then

4) As stated by Rusch (2014), according to Choi and Bowles (2007), when there are many tolerant individuals, friendly intergroup relations can be considered to have been achieved.

Because it's good. In fact, a paper by Choi and Bowles (2007) states that the values of various parameters were set based on actual hunter-gatherer groups. However, Dyble (2021) also questions the validity of the parameter settings assumed by Choi and Bowles (2007). It is widely known that kinship is important in the evolution of cooperation. The word "kinship" here is not a term used in everyday life, but is a term used in evolutionary biology, and although it may sound harsh, it refers to some kind of genetic correlation between interacting individuals. For example, population size and migration rate are known as parameters that affect relatedness. For example, if migration between groups occurs frequently, the meaning of group structure becomes less meaningful, and the degree of kinship may decrease. Because it is difficult to measure relatedness in real populations, population genetic indicators are often used to measure genetic similarity. One of them is *F_{ST}*. Under the parameter settings of Choi and Bowles (2007), the *F_{ST}* value was higher than the actual data, and altruistic behavior did not evolve at a migration rate that showed an *F_{ST}* value close to the actual data⁵).

Although related to the criticism of Dyble (2021), another major point of contention in the debate surrounding Choi and Bowles (2007) was the theory of inclusive fitness.

Bowles and his colleagues aim to develop a theory that can explain why humans cooperate with strangers. They also emphasized that it is difficult to interact with "close relatives" as a model setting, and positioned the approach to the evolution of altruism through intergroup conflict as "conventional evolutionary biology theory." There is a tendency to contrast things. Bowles et al.'s use of terminology differs from that used by evolutionary biologists, making it difficult to sort out, but they have been criticized by evolutionary biologists, who perceive this as a denial of their accumulated research. After the publication of this paper, Laurent Lehmann, a theorist of inclusive fitness theory who also debated with Martin Nowak and Edward Wilson, published several papers criticizing Choi and Bowles (2007) (Lehmann, 2011); Lehmann & Feldman, 2008). In inclusive fitness theory, one's

The change in one's own fitness due to one's actions is called direct fitness, and the change in the fitness of other individuals due to one's own actions multiplied by kinship is called indirect fitness (for example, West, El Moudden, & Gardner, 2011). (see Figure 1). Based on the model of Choi and Bowles (2007), Lehmann decomposed and described the effects of direct and indirect fitness in the coevolution of the tendency to conquer outgroups and the tendency to engage in combat. An increase in reproductive opportunities due to a man interbreeding with females from a group he conquered is a direct increase in fitness, and an example of an indirect increase in fitness is that his "related" individuals have more opportunities to reproduce. It is assumed that He then showed that intergroup conflict can lead to an increase in both direct and indirect fitness, and once again emphasized the effect of indirect fitness. Considering this in conjunction with the criticism by Dyble (2021) mentioned earlier, there may be room to reconsider the importance of the effect of kinship.

Samuel Bowles, along with Martin Nowak and Robert Boyd, can be summarized as a type of theorist of "group selection" that emphasizes the role of intergroup conflict in human history, and can be contrasted with researchers of inclusive fitness theory. be. Although there is room for debate as to the extent to which this framework can explain the diversity of each "camp," there are many papers and reviews that organize concepts in this way. When considering group selection versus inclusive fitness, it is difficult to organize the discussion because the same term may be used with different meanings depending on the "camp." However, when organized within the framework of the comprehensive fitness theory of direct and indirect fitness, intergroup conflict is one of the mechanisms that brings about changes in direct and indirect fitness. Therefore, there is room to go further than the explanation that "evolved due to intergroup conflict." One of the most comprehensive discussions from the perspective of inclusive fitness theory is the review by Stuart West et al. (West et al., 2011). Mathematical models of intergroup conflict that include parochial altruism

have continued to be proposed in recent years. One example is Alberto Micheletti and Andy Gardner, who like Lehmann are theorists of inclusive fitness (Micheletti, Ruxton, & Gardner, 2017, 2020). For example, they are addressing the issue of gender differences pointed out by Rusch (2014) above. Choi and Bowles (2007) describes the arrival of mathematical models of human intergroup conflict.

5) Another paper by Choi and Bowles (Bowles & Choi, 2013), which models the influence of private property on neolithization, has received similar criticism regarding its parameter settings (Gallagher, Shenman, & Thomas, 2015).

It's not a culmination. Research is still underway on the various factors and consequences that lead to war.

3. Prehistoric research on intergroup conflict

While it has been pointed out that there is a danger of equating modern and prehistoric hunter-gatherers, archaeological data provides the most direct clues to the environment of evolutionary adaptation. Group violence exists even in hunter-gatherer societies, such as the discovery of human bones believed to be victims of "genocide" approximately 10,000 years ago near Lake Turkana in Kenya (Lahretal, 2016). This is widely recognized even among archaeologists. However, from the perspective of parochial altruism, what is important is whether intergroup conflict has occurred on a constant and large scale to the extent that it can act as a selection pressure that promotes the evolution of altruism. Bowles (2009) estimates the mortality rate due to intergroup conflict to be 12-16% based on ethnographic examples and the proportion of injured human remains found in prehistoric hunter-gatherer sites. On the other hand, this estimate has also received various criticisms. In this section, we briefly review the extent to which evidence for intergroup conflict exists in prehistoric hunter-gatherer societies in Japan and elsewhere, particularly in Europe and North America. However, since Bowles et al. were particularly interested in the proportion of injured human bones excavated, the discussion in this section will focus on injured human bones. Furthermore, it has been pointed out that there is actually a great diversity of people, even though they are called hunter-gatherers. It is assumed that the hunter-gatherer lifestyle that humans lived in the so-called evolutionary adaptive environment was an egalitarian (=no hierarchy) and nomadic (=no sedentary) lifestyle. It is necessary to pay attention to this point (eg, Boehm, 2012).

3.1 Intergroup conflict in prehistoric Japan

Japan's prehistory can currently be summarized as follows (eg, Nakagawa and Nakao, 2017a; Nakagawaetal., 2017, 2021; Nakaoetal., 2016, 2020). First, since the number of human bones excavated from the Paleolithic period, which preceded the Jomon period, is limited, no positive evidence of intergroup conflict can be found. Regarding the following Jomon period (13000 cal BC–800 cal BC), there is no evidence of significant conflict, especially if we limit the discussion to Honshu. Finally, Nokosha

However, it has been argued that in the Yayoi period (800 cal BC–AD 250), which followed the Jomon period, there is evidence of larger-scale intergroup conflict, or war (eg, Hashiguchi, 2007; Matsuki, 2001; Sahara, 1986, 1999). This is not just limited to the scars left on human bones; various types of evidence that are said to be related to war, such as villages with defensive facilities, have been found at ruins from this period in various places. .

However, the following cautions should be taken when interpreting this evidence for the Yayoi period. First, if we look only at injured human bones, it is only in the northern Kyushu and Kinki regions of the mid-Yayoi period that there is some reliable evidence of conflict. Regarding the early/early or late Yayoi period, the above areas (for example, the early Shingata ruins (Kobe City, Hyogo Prefecture), the early Shinmachi ruins (Itoshima City, Fukuoka Prefecture)) and other areas (for example, the Aoya ruins in Aoya Town, Tottori Prefecture). Injured human bones have been discovered at the Kamiterachi Ruins, but the interpretation of these remains is not so simple. For example, if a conflict of a certain size or more had occurred, such as a war, it would be appropriate to find similarly injured human bones not only in some ruins but also in nearby ruins. In fact, this was the case in northern Kyushu and Kinki during the mid-Yayoi period (eg, Nakagawa and Nakao, 2017a; Nakagawaetal., 2017, 2021). However, in the case of the Shinmachi and Nippata ruins mentioned earlier, only the bones of murdered people were excavated from those ruins, and similar human bones were not excavated from nearby ruins at the same time. The same is true of the Aoya Kamiterachi Site (Tottori Prefecture) (eg, Nakagawa, 2021), and other interpretations of these injured human bones are quite possible. For example, it cannot be denied that injuries may occur as a result of a single, unilateral attack rather than a regular conflict between groups. In addition, there are cases where multiple wounds can be identified as cases in which another interpretation of injured human bones is possible. For example, some of the human bones excavated from the Doigahama ruins (Shimonoseki City, Yamaguchi Prefecture), the Kuma/Nishioda ruins (Chikushino City, Fukuoka Prefecture), and the Yamaga/Katsube ruins (Yao/Toyonaka City, Osaka Prefecture), as well as the human bones themselves, remain. However, there is an example of the Shingu Imperial Ruins (Tatsuno City, Hyogo Prefecture) where multiple stone arrowheads were discovered in the grave structure and it is assumed that the buried person was pierced with multiple stone arrowheads. These are sometimes interpreted as examples of warriors who died in war (cf. Fujiwara, 2004). However, at the forefront of life or death, mar

It is necessary to carefully consider how realistic it is to be stabbed in the face or slashed repeatedly in different places (eg, Matsuki, 2000). There is also a strong possibility that this was some kind of executional killing. Furthermore, it is necessary to consider the possibility that this may be a ritual in cases of so-called head-hunting, where only the head is missing, such as at the Yoshinogari ruins in Saga Prefecture (eg, Tanaka, 2008; Yamada, 2015).).

Based on the above, there is no evidence that intergroup conflicts occurred on Honshu before the Jomon period, when Japan lived as a hunter-gatherer (although, at least in the current situation, there is no evidence that intergroup conflicts occurred on Honshu). It has been pointed out that the population is sedentary to some extent, and that a certain level of hierarchy can be seen in some areas). Even in the Yayoi period, after agriculture became established, evidence of intergroup conflict can only be seen in some areas during the middle period. Of course, this is the most limited view, and if we interpret the various types of evidence more broadly, it may be possible to consider that war-like intergroup conflicts were observed over a broader range of periods and regions (e.g). ., Hashiguchi, 2007)»

6) Furthermore, even if no intergroup conflict actually occurred, it is highly possible that some kind of tension existed between the groups. To consider this possibility, for example, if there is tension between groups, there will be relatively little intergroup interaction, and from a cultural perspective, there will be more diversity between groups than within groups. It can be predicted. However, for example, in the case of northern Kyushu in the middle of the Yayoi period, burial implements called jar coffins came into widespread use, but the diversity among groups considered from the form of jar coffins is generally thought to be least in the middle period. (eg, Nakazono, 2004). Therefore, judging from the diversity of the forms of jar coffins, we must carefully judge how serious the tension between groups was during the middle period.⁷⁾

In the middle of the Yayoi period, northern Kyushu and Kinki experienced intense

6) Hashiguchi (2007) and others have determined that the tip of a weapon left behind in a burial implement called a coffin, which was widely seen in northern Kyushu during the Yayoi period, was something that had been stuck in the body. . However, it has been pointed out that in order to determine whether these were grave goods or whether they were stuck in the body, it is necessary to examine in more detail the traces of the weapons used in addition to the excavation conditions. (eg, Fukushima, 1998), but there is currently

no reliable means of discrimination. 7) Of course, this possibility needs to be verified with everyday earthenware other than jar coffins.

As for whether or not they were in a state of combat, that is questionable. For example, if extremely violent battles had taken place at the sites where injured human bones have been unearthed, we cannot deny the possibility that the bodies and ruins would have been abandoned after the battle. However, for example, in the Kuma/Nishioda ruins and the Yokokuma Kitsunozuka ruins, where many injured human bones have been excavated, the only cases that can be confirmed are those that were buried. Moreover, the ruins themselves show evidence of continuous human habitation not only from the Yayoi period but also from the Kofun period (eg, Chikushino City Board of Education, 1993; Ogori City Board of Education, 1985). Although it cannot be denied that the population may have been reduced to some extent due to intergroup conflicts, based on this evidence, it is more reasonable to assume that the wars in northern Kyushu during the mid-Yayoi period were not so fierce that villages were wiped out. Deaf⁸⁾ .

3.2 Intergroup conflict in other areas

Europe and North America are other countries where there is some evidence of prehistoric hunter-gatherer societies. Although it cannot be said that sufficient information has been collected compared to Japan's prehistoric period, I would like to touch on some points that can be made to some extent. Similar to Japan, there is no reliable evidence of intergroup conflict in the Paleolithic period in Europe (before approximately 10,000 cal BC) (eg, Ferguson, 2013b). The ensuing Mesolithic period (approximately 10,000 calBC–4,000 calBC) was a period of transition to agriculture and settlement. It appears that many settlements with defensive facilities have not been discovered (eg, Bailey & Spikins, 2008), but notable examples appear during this period. Looking at the regions and proportions where injured human bones are excavated, it appears that injured human bones are concentrated to a certain extent in certain periods and regions, similar to the Yayoi period in Japan (eg, Nakagawa and Nakao, 2017b). It has taken on characteristics different from the hunter-gatherer societies of prehistoric times.

8) Since no detailed information such as village data has been collected for the Kinki region, I would like to leave it aside for now. Of course, there is already a collection of information such as the number of ruins (eg,

Wakabayashi, 2008, 2021). 9) In Africa, there are well-known examples such as Jebel Sahaba (Wendorf, 1968) and Nataluk (Larhetal., 2016) from the Upper Paleolithic period, but the situation in other areas is extremely unclear, so they will not be discussed here. do not have. Furthermore, since very few remains from the hunter-gatherer era have been found in South America, this topic will not be discussed here either. In China, injured human bones have been discovered at several sites from the Neolithic period onward (eg, Dittmar et al., 2019; Pechenkina, Benfer, & Ma, 2007), but no comprehensive information has been obtained yet. Therefore, this is also omitted.

It is certainly true that it was a time when Furthermore, during the Neolithic period that followed the Mesolithic period, various cases of injured human bones and other evidence of intergroup conflicts were found, indicating that intergroup conflicts had occurred to some extent since the Neolithic period. There is almost no argument

to deny it so far. The most prominent case in North America is probably the archaeological sites found on the west coast of present-day British Columbia, Canada (eg, Ames & Maschner, 1999; Cybulski, 1993; Sasaki, 2021) . Many injured human bones have been discovered at these sites, and they are often cited as prime examples of warfare in North American prehistoric hunter-gatherer societies (eg, Bowles, 2009; Sasaki, 2021). There is no doubt that many injured human bones have been unearthed, especially since the Middle Pacific Period (1800 calBC–AD500) (Cybulski, 1993, pp. 156–157). However, for example, Cybulski (1993, pp. 144–146, Table 12) provides a detailed description of the human bones excavated from Greenville in this group of ruins, and many of the human bones show signs of healing. It is also certain. For example, in the case of a fight where the purpose is to kill, the purpose is to inflict fatal injuries, so unless the victim successfully escapes, the wounds left behind will most likely not heal (eg, Ferguson, 2013a). In fact, in the case of injured human bones from South America, it is often speculated that some kind of ritual conflict may have taken place, as evidence of healing remains (eg, Tung, 2007). Considering these points, even if British Columbia's prehistoric hunter-gatherers engaged in some kind of conflict, it is possible that it also had a ritualistic meaning. Of course, some villages with defensive facilities have been discovered in the ruins mentioned above, and it seems highly likely that some form of conflict occurred between the villages. It should also be noted that these people were also "complex" hunter-gatherers, sedentary and with a certain hierarchy.

3.3 Summary

Although this is a very rough overview, we have identified evidence of intergroup conflict primarily in prehistoric hunter-gatherer societies in Japan, Europe, and North America. First, all countries are egalitarian and highly nomadic.

Regarding the Paleolithic period, when people were thought to have lived as a hunter-gatherer society, little clear evidence of intergroup conflict has been found. When we consider subsequent societies with a certain level of hierarchy and settlement, we find evidence of intergroup conflict in some periods and regions. However, it cannot be said that intergroup conflicts are always likely to occur in hunter-gatherer societies as long as they are hierarchical and sedentary. Based on the above, we can assume that in an evolutionary adaptive environment in which people lived an egalitarian and nomadic hunter-gatherer lifestyle, intergroup conflict occurred at least frequently enough to support the evolution of parochial altruism. It is true that the evidence is so poor that it is difficult to do so.¹⁰⁾

Four. Anthropological research on intergroup conflict

This section provides an overview of (cultural) anthropological research on intergroup conflict. As with psychology in the next section, we do not have the space to list all the ethnographies related to intergroup conflict, so for the purpose of this paper, which is to examine the evolutionary model of parochial

altruism, we will provide an overview of selected cases that are important. I decide to go. In anthropology, until the end of the 20th century, the image of hunter-gatherer societies as peaceful was common (with the exception of Chagnon (1968), of course) (eg, Lee, 1979; Thomas, 1959), and particularly since Keeley (1996), intergroup conflict in traditional societies, as well as archeology, seems to be receiving more attention (eg, Glowacki, Wilson, & Wrangham, 2020; Wrangham & Glowacki, 2012). Among these studies, the most important for the purpose of this paper is Fry and Söderberg (2013). In this study, we collected data from the Standard Cross-Cultural Sample and examined the extent to which intergroup conflict occurred among so-called nomadic, egalitarian hunter-gatherers. According to them, fighting

¹⁰⁾ Of course, as Oda (2020) and Takezawa (2019) point out, the cost of altruistic behavior is also important when it comes to the evolution of parochial altruism, and the above evidence alone cannot refute the evolutionary model of parochial altruism. isn't it. The point at issue here is that it is questionable whether prehistoric conflicts were as serious as Bowles (2009) and others assumed, and that the evidence so far is inconsistent with the assumed scenario. be. Furthermore, if the cost of altruistic behavior is small, it would be those who support a parochial model of altruism who should demonstrate how small it is.

Therefore, even if there were some kind of victims, most of them (55% of the total) were due to conflicts between individuals (homicide), and of the 21 societies in which they could be sampled, in 10 societies it was committed by groups. No murder was observed. These data make claims that intergroup conflict was common among prehistoric hunter-gatherers seem questionable. Furthermore, even in societies that are thought to be frequently involved in intergroup conflicts, a more complex picture can be

seen when looking at the motivations for participation. In the case of the Dasanets quoted at the beginning, their main motive for participating in battle is to show off their "masculinity," and one of these reasons includes "jealousy" toward not only their enemies but also their allies. (Sagawa, 2011, pp. 200–201). It is also believed that by participating in battle and inscribing scars called chede, one becomes more sexually attractive and gains an advantage over members of the in-group in terms of "masculinity" (Ibid., p. 206; Sagawa, 2019). pp. 228–230 11). As mentioned above, the situation in which a person participates in a fight out of jealousy toward members of the same group suggests that narrow-minded altruism, altruism toward the in-group, and hostility toward the out-group coevolved due to intergroup conflict. This would contradict the scenario. This is because jealousy towards the in-group is of course contradictory to altruism towards the in-group. Some Daasanach men have stopped going to war. They give several reasons, one of which is as follows.

...On a battlefield where collective violence is used, I witnessed Daasanach behaving in a self-centered manner instead of helping each other. The stories of people who have "become cowards" center on images of men taking selfish actions to achieve victory on the battlefield, of men abandoning their friends and running home, and of men stealing livestock stolen from the enemy. It is a scene where Daasanach fight with each other (Ibid., 2019, p. 226).

The important point from the above quotation is that not only do some people stop going to war;

11) There seems to be some doubt as to whether this is actually the case, and although this is an example of a different ethnic group, it is said that for the Waorani, participating in battles does not necessarily improve their own reproductive fitness. There are also research results (eg, Beckermanetal., 2009; Chagnon, 1988).

This means that there may be cases in which altruism toward the in-group and hostility toward the out-group do not work together on the actual battlefield. This point seems to be consistent with the psychological research discussed in the next section.

Let's return to the other case cited at the beginning. The Samburu, Turkana, and Pokot are pastoralists living in Kenya, and as the quote indicates, they have a very complex relationship. Although Samburu and Pokot dislike each other, they are said to be "friends bound together" through rituals (Holtzman, 2016, p. 171). On the other hand, the relationship between Samburu and Turkana is "a very close one, often characterized by genuine goodwill," while the two are "regarded as sworn enemies, and have had a long-standing relationship from the distant past to recent times." "There have been violent conflicts for many years" (Ibid., p. 176).

Regarding such intergroup relations, for example, does the parochial altruism scenario in which altruism toward the in-group and hostility toward the out-group coevolve as a result of intergroup conflict apply? In the case of the Samburu and Turkana, it may be possible to view "pure good will" as superficial, but there are cases of marriages being formed between the two groups, and children being adopted. (Ibid., p. 177). Furthermore, it seems that Samburu and Turkana sometimes live next to each other near the boundary between the two groups (Ibid., p. 178). These relationships are very similar to those between manambu and neighboring populations (eg, Harrison, 1993; Kurimoto, 1999). The Manambu are an ethnic group in Papua New Guinea who live by farming and hunting and gathering, but it appears that this group also frequently had conflicts with neighboring groups in the past. However, their relationships with neighboring groups are not always hostile; they are close through trade and marriage, similar to the relationship between Samburu and Turkana (Harrison, 1993, p. 40; Kurimoto, 1999, pp. 125–126). Considering this situation, it can be seen that even if two groups frequently clash, this does not necessarily presuppose hostility toward the outgroup. In addition, as with the Samburu and Pokot, even if there is hostility toward out-groups, there are cases in which people try to avoid intergroup conflict as much as possible through rituals. Of course, the above example is a relationship between pastoralists and farmers, which is different from prehistoric hunter-gatherer societies. However, the relationships between human groups are

It is certain that it shows possibilities that cannot be grasped simply in terms of whether or not. In fact, in

traditional societies, there are not only instances of violence but also a variety of conflict resolution methods (eg, Endo, 2016; Fry, 2005; Matsuda and Hirano (Nomoto), 2016; Miyamoto, 2003; Shigeta et al. Itani, 2016). In the case of egalitarian hunter-gatherers, a long-established conflict resolution technique is to walk away from the other person when a conflict is about to occur (eg, Fry, 2005; Gardner et al. , 1999; Ichikawa, 1999; Marlowe, 2010; Nakao, 2015; Nakao & Machery, 2012). Furthermore, in the case of hierarchical groups where there are chiefs, it is not uncommon for the chiefs to attempt to resolve conflicts (eg, Endo, 2016; Fry, 2005; Matsuda and Hirano (Nomoto), 2016; Miyamoto, 2003). .

Particularly among hunter-gatherers, there are not many conflicts between groups in the first place, so these conflict resolutions are mainly carried out within the group, but even between groups, they are basically resolved before or after a conflict occurs. It appears that some kind of countermeasure is often taken before the problem becomes serious. For example, let's look at the relationship between the Sukuma pastoralists and the Bogoro farmers in Tanzania (Kato, 2016). Due to a lack of land, Sukuma began to migrate to areas where Bogoro lived around 1988, and as Bogoro expanded their agricultural land, conflicts between the two began. The incident escalated into a major brawl in 2006, and a large rift appears to have formed between the two parties. However, when the paddy fields became muddy due to a cyclone and the Bogoro were forced to plow with hand hoe, some Bogoro asked Sukuma to plow with oxen. This event led to discussions between the elders of both ethnic groups, and the relationship between the two groups was said to have greatly improved (Ibid., pp. 64–68). Although it is dangerous to generalize from specific cases, it is important to note that conflict between groups is not something that easily arises, and that it is highly conceivable to find a way to coexist with each other in some way. This is supported by an example in the text.

Finally, let me give you one more example of Dodos. The Dodos are also pastoralists living in northern Uganda and adjacent to Turkana. The relationship between Dodos and Turkana is also a complex one, just like the example mentioned above. be done.

...For the people of Dodos, the people of Turkana

are potentially hostile opponents who may raid each other.

On the other hand, the Dodos people allow or tacitly approve of the Turkana people's use of resources related to pastoral activities such as grazing land and water holes within the Dodos' area of activity, and at the individual level they treat each other as friends. They are also non-hostile partners, such as visiting each other and gifting or exchanging livestock (Kawai, 2019, p. 208).

You need to be careful when raiding here. Although it is certain that it is a type of raid, the raids observed in Dodos and Turkana are aimed at livestock, and are not aimed at land grabbing or slaughter (Ibid., p. 198). It seems that such raiding often occurs between Dodos and Turkana, and Dodos shows a certain kind of sympathy towards Turkana (Ibid, p. 209). Moreover, it appears that such understanding and consideration for the other party is shown more often when the raiding exchange continues for a long time. Perhaps this sympathy and consideration is an afterthought justification to avoid hostile feelings toward the other group (eg, Haidt, 2001), but raiding does not easily lead to serious intergroup conflict. There is no doubt that such a conflict will not develop, or at least that Dodos is trying to avoid such a conflict without unnecessarily increasing hostility towards Turkana. Up to this point, I have attempted to give a certain overview of research on intergroup conflict in anthropology, although I have only introduced very general examples¹²). At present, there is not

much positive evidence regarding the extent to which intergroup conflicts actually occur in nomadic and egalitarian hunter-gatherer societies. Rather, various strategies have been attempted to avoid conflict without increasing hostility toward neighboring outgroups, and these are common not only in hunter-gatherer societies but also in various traditional societies, such as pastoralist and agricultural societies. This is also something that can be seen. Furthermore, the scenario assumed by an example in the text does not apply to ethnic groups that are sometimes considered to be militant, such as the Turkana and Daasanach.

12) The discussion in this section focuses on African cases, and tends to be biased towards pastoralists. In the future, it will be necessary to confirm cases in a wider area.

There are some cases where it is unlikely. In the next section, we will look at examples of intergroup conflict in experimental situations, but in the context of traditional societies, including hunter-gatherer societies, there are many cases that contradict the evolutionary model of parochial altruism. You could say that.

Five. Psychology related to intergroup conflict

This section provides an overview of the various types of psychology involved in intergroup conflict. For example, a variety of studies have been accumulated from various angles regarding hostility toward out-groups and altruism toward in-groups, which are assumed in the evolutionary model of narrow-minded altruism. There is also, of course, a great deal of research into the psychology involved in conflict and violence. Below, in line with the purpose of this paper, we will select and discuss some

important studies. The first is hostility toward out-groups and altruism toward in-groups. This is directly related to the evolutionary model of parochial altruism, and if we can confirm that these two are linked, the validity of this evolutionary model will increase. In fact, there seems to be a tendency for humans to behave in some way more altruistically towards in-groups than out-groups, and conversely to treat out-groups more poorly than in-groups (such as not cooperating with out-groups). (eg, Balliet, Wu, & DeDreu, 2014; Hewstone, Rubin, & Willis, 2002; Kumagai, 2016; Romano et al., 2017, 2021). The question is whether these two will work well

together. In the parochial evolutionary model of altruism, it is assumed that both will co-evolve. However, as various studies have pointed out, these two do not necessarily go hand in hand (eg, Allport, 1954; Brewer, 1999). For example, in an experimental game (called an IPD-MDgame: intergroup prisoner's dilemma-maximizing difference game), participants choose between (1) a choice that benefits the group, and (2) a choice that also benefits the group. It has been reported that when presented with options that would also cause damage to the other group, very few people chose option (2) (Halevy, Bornstein, & Sagiv, 2008). Of course, if we were to follow a parochial evolutionary model of altruism, we would expect many participants to choose the latter option, but this is not the case. This was done in an artificially created group.

Although this is an experiment, there is also research that conducted a similar experiment with groups of people who supported different soccer teams or political parties, and whose teams or political parties were rivals (Weisel & Böhm, 2015). In this study, in addition to the setting in which the two options were presented earlier, we also set conditions in which options (1) and (3) options were presented that would bring benefits to the own group and the other group at the same time. An experiment was conducted (in this case, the former would be relatively damaging to the other group). As a result, almost the same results were obtained under conditions (1) and (2) as in Halevy et al. (2008), while under conditions (1) and (3), (1)), and there is a tendency to not provide much assistance to those in groups with whom they have an adversarial relationship. In particular, the latter tendency is a result that is consistent to some extent with the evolutionary scenario assumed by the evolutionary model of parochial altruism, but it should be noted that it is not hostile to the extent of actively causing damage to the other party. It would be necessary. In fact, other experiments have even suggested that the more altruistic one is toward one's in-group, the less hostile one is toward the out-group (Yamagishi & Mifune, 2009, 2016); Many other studies have found that hostility towards out-groups is less common (eg, Chen & Li, 2009; De Dreu et al., 2010).

Furthermore, there are not many studies on explicit hostility toward out-groups. Among these, several studies have pointed out the causes and contexts in which hostility toward out-groups becomes apparent. Böhm, Rusch, and Güreker (2016) used an IPD-MD game similar to Halevy et al. Only when people are told in advance that the other group will harass them after they have been harassed (by others) and after them, will the number of times they choose option (2) against the other group significantly increase. It is shown that. In other words, harassment of another group is seen only in the former retaliatory situation and the latter self-defense situation. There are also other experiments that have shown a tendency to attack an opponent in self-defense only when an attack from the opponent is expected (eg, Mifune, Simunovic, & Yamagishi, 2017; Simunovic et al., 2013). In a game where if you are attacked by your opponent, your money is greatly reduced, but if you attack yourself, the situation is the opposite (however, if neither player does anything, your money remains the same).

When we set two cases: one in which only the attacker is able to attack the opponent, and the other in which the opponent is also able to attack (and self-defense attacks are also possible), the rate of attacks increases significantly in the latter case. Moreover, it is important that this self-defense attack does not depend on whether the opponent is an in-group member or an out-group member. Of course, the evolutionary model of parochial altruism predicts only hostility and aggression toward out-groups, and the fact that aggression toward in-groups is also observed is inconsistent with this model. Similar results have been obtained in studies conducted in modern societies (e.g., King and Wheelock (2007) investigated, through telephone interviews, the conditions under which punitive attitudes toward African Americans change. The results showed that the more people felt that minorities posed a threat to them, the more severe their punitive attitudes toward them were. In fact, in the context of social identity theory, one of the important conditions for hostility toward an outgroup is whether it poses a threat to one's own group, and this situation is particularly important for immigrants, etc. Similar findings may be found for (eg, Reicher, Haslam, & Rath, 2008). Thus, hostility and aggression toward out-groups may be explained by aggression and threats from out-groups, rather than being linked to altruism toward in-groups (eg, Halevy, 2017 ; ..2010). Attacks on out-groups are not as easy to occur as altruistic attacks on in-groups. Various studies have pointed out how troublesome it is for

humans to attack others (at least physically), even if they are out-groups. First, it goes without saying that attacking others is extremely stressful (eg, Collins, 2008; Malešević, 2017). Furthermore, when actually attacking an opponent, a corresponding mental response is required. One of these is dehumanizing the other person (eg, Kumagai, 2016; Haslam, 2006). Dehumanization is literally the attitude of not viewing others as fellow human beings. (Kumagai, 2016, pp. 196–97). This dehumanization occurs when conflicts arise and justify attacks and hostility towards the other party (eg, Kteily).

etal., 2015; Kumagai, 2016; Struch & Schwartz, 1989), or it is thought to encourage hostility toward the other party (eg, Kteily, Hodson, & Bruneau, 2016; Rai, Valdesl, & Graham, 2017). Of course, the former type of justification is not particularly necessary for the evolution of parochial altruism, and is only a hindrance. However, a study investigating hostility toward ultra-Orthodox Jews in Israel found that altruism toward the in-group was not related to hostility toward the ultra-Orthodox out-group, and that Hostility toward Orthodoxy has been shown to be associated with the threat of actual violence and the dehumanization of ultra-Orthodox (Struch & Schwartz, 1989; similar results are also found in Maoz & McCauley, 2008, etc.). Of course, there are also studies showing that altruism toward the in-group and aggression toward the out-group occur simultaneously (eg, Cacaultetal., 2015; Sherif, 1961). In the study by Cacault et al. (2015), they conducted an experiment using a public goods game. By preparing multiple options, one in which the difference was deducted from the holdings of another group, a certain amount of investment was also made in the latter option. The latter option is an option that attacks the out-group and acts altruistically toward the in-group, and is an option that is consistent with the parochial altruism model.

Furthermore, a variety of psychological research has been accumulated regarding gender differences, which have not been taken into account in narrow-minded models of altruism. In fact, Sherif (1961) conducted a study on boys, and several studies have been published in recent years that point out that men may be more likely to be aggressive toward outgroups than women (eg, McDonald, Navarrete, & VanVugt, 2012; VanVugt, 2009; Van Vugt, De Cremer, & Janssen, 2007). So far, we have

provided a very brief overview of psychological research related to intergroup conflict, particularly hostility and aggression toward outgroups. It is difficult to say that such hostility is correlated with altruism towards the in-group, as assumed by the narrow-minded evolutionary model of altruism. It may just be caused by. Moreover, even when people harbor hostility, it is not uncommon for people to go out of their way to justify that hostility. archeology

As in the case of anthropology and anthropology,
Regarding the theoretical aspect, there are
A reasonable assessment is that there is considerable evidence that
It would be worth it.

6. Conclusion

When it comes to conflict, humans, perhaps especially men,
I'm sure I feel some kind of excitement from time to time.
Maybe. Taiga dramas have continued for many years, and
This is the reason why the past battle continues to be depicted so often.
Is there a reason behind this? And such excitement
There are some evolutionary reasons behind this
It wouldn't be strange. Humans have been around since ancient times
There have been repeated disputes. intend to deny it
There is no hair. But it was personal
whether it was between an organized group, and to what extent.
whether the frequency and scale of disputes were
What impact did this have on human evolution and society?
These must be carefully considered and
The stereotypes that we in our generation have
It's a crude way of applying a typical perspective on war and heroes.
There's no reason. On the other hand, humans can
It is certain that they avoided conflict and coexisted together. So
This was not necessarily a peaceful coexistence,
What kind of coexistence was this?
Needless to say, serious consideration is required.
Up to the previous section, mathematical models, archaeology, anthropology, and
An overview of the debate on intergroup conflict in psychology.
I've been watching it. Due to space limitations, this is very concise and biased.
However, based on this overview,
However, due to frequent intergroup conflicts in the past,
altruism and hostility toward outgroups coevolved.
The evolutionary model of parochial altruism assumes
There is considerable evidence that contradicts the scenario.
could have been shown. Intuitive persuasion of this model
Although the power is certain, it requires careful handling and multiple angles.
Further consideration will be required, and at present it is not accepted at face value.
The point in this paper is that there is no way we can accept it.
This is the conclusion.

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I got it. I want to thank you. Japan Society for the Promotion of Science Grants-in-Aid for Scientific Research (1st

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I got it. I would also like to thank you.

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