

Becoming a Traditional Fisherman? – Reasons for Selecting a Fishing Method: Ethnographic Approach to Underwater Speargun Fishing, Republic of Palau, Micronesia¹

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Abstract

By focusing on the practice of underwater speargun fishing among local fishermen in the Republic of Palau, Micronesia, this article depicts the detailed process of the fishermen's choice of fishing methods as well as their perception of recently introduced fishing techniques. It is argued that the complexity involved in designing tools, selecting specific techniques and choosing fishing locations is connected to both functional and cultural reasons, which fishermen themselves constantly reinterpret through the practice of everyday fishing. To support this argument the paper presents a detailed ethnographic study on the practice of underwater speargun fishing, including fishermen's cognitive construction of seascapes, their choice of different speargun mechanisms and the use of specific fishing techniques. Through this study, I argue that the primary motivations behind the fishermen's complex arrangement of fishing practice are often linked to their perception of what it means to be a 'traditional fisherman', a notion embodied in the physical exercise and hardship inherent to the practice of underwater speargun fishing.

Key words: Palau, Technological choice, Traditional fisherman, Underwater speargun fishing,

Introduction

The Republic of Palau (ROP) is a newly independent archipelagotic country located in the western Micronesia. The region displays a variety of oceanographic settings, including a world famous coral reef, which attracts keen divers from ex-colonial countries³. Although Palau now relies on a market economy supported largely

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³ Palau has a unique colonial history, starting from the late 19th century with the arrival of the Spanish colonial administration. After the brief occupation by the Spanish, the country was occupied by the German colonial government of Micronesia from 1904 until 1914. Then from 1914 until the end of the war, 1945, it was taken over by the ex-Japanese imperial government of South Pacific, *Nanyoucho*. During this period Palau had the most significant social influence from the occupational administration due to rigorous Japanese colonial rule. After the war and until its independence in 1994, Palau was under U.S. political control which created another significant change for the political structure (a dual structure incorporating both democratic and traditional chieftain system) as well as its socio-economic state (For more detailed information, see HEZEL, F 1985 and HANLON, D 1998).

by imported goods, the sea has always been the main source of subsistence supply for the people of Palau. Marine products gathered by women⁴ near the shore and fish caught by men in the relatively large lagoon still provide the major part of the people's everyday protein intake.

Earlier studies conducted in the region have described a variety of techniques and methods practiced in traditional fishing, established through generations of fishermen's experience (KUBARY 1885, KRAMER 1929, CLARK 1953). This 'traditional indigenous knowledge' is thought to inform fishing practice, notably in shaping native understandings of marine environmental factors, such as weather conditions, fishing location, and types of fish targeted. All such conditions are taken into account in the choice of fishing methods. However, it has recently been remarked that the variety of fishing methods and techniques seen in traditional Palauan fishing practice has been reduced as a result of the people's appropriation of modern technology⁵. The central thesis which governs the interpretation of this loss is that fishermen have taken modern methods to replace traditional ones, as they are more practical and productive (JOHANNES 1981).

The above hypothesis on the transformation of Palauan fishing practice projects the simple logic of the 'optimal forager', stressing the priority of the functional aspect in the fishermen's choices of technology. However, in actual practice, the fisherman's fine mastery of his craft requires a complex blend of knowledge and consideration vis-à-vis cultural concerns. The significance of cultural propensity in technological choice has been discussed in anthropological studies of technology. It has been argued that choices of technology appropriation are determined by social representation or relations that go far beyond a mere action on matter (LEMONNIER 1993).

In this article I offer a detailed ethnography of the complex decision-making process involved in Palauan underwater speargun fishing. My focus stems from an ethnographic unease related to the discrepancy between local perceptions of the method and its emergence as technological development. Among contemporary Palauan fishermen, the method of underwater speargun fishing is often described as 'Palauan/traditional'⁶. During my fieldwork, I found that a fisherman was considered good and skilful -with all the attached prestige and recognition- if he practised underwater speargun fishing. However, the technique itself was only introduced to the islands in the 1950's⁷ and has only become productive enough for fishermen in the last twenty years.

⁴ Palauan women are traditionally involved in agriculture, mainly growing taro potato and tapioca for starch. The gender division of labour is symbolically represented in the preferred Palauan meal, which requires *Odoim* (protein) provided by men and *Ongraol* (starch) provided by women (For more detailed information on this topic, see AKIMICHI, T. 1986).

⁵ In his study of Palauan fishing, Johannes (1981) argues that traditional techniques of Palauan are so endangered that '*the classical anthropologist might say that fishing today in Palau is a pale shadow of what it once was*' (1981: 15).

⁶ My interviews with most informants were conducted mainly in English. I used the local language in most fishing trips and other contexts of everyday life but it never developed enough to be better than their speaking English. Certainly words, traditional and Palauan were commonly used in conversations between my informants and I, and each time I clarified their use of terminology. The unease I discuss here was in fact one of the questions that came out of my conversation with informants to clarify the point of their recognition of the word 'Palauan and Traditional'.

TORRENCE (1983) argues that tools used in the capture of aquatic animals are more complex in comparison to those used to capture land animals because the former move in more complicated ways. In Palauan fishing, however, I found that this complexity is taken into account in the practitioners' anticipation of circumstances, their selection of appropriate techniques and tools in relation to landscape, time, and the type of fish sought. Linkages between different factors are related to each other but not follow on from each other in a fixed chain: for example, the weather condition does not necessarily determine the type of tools used, especially the choice of micro-mechanism in tools. From my field data, I have found that the incongruity between the emergence and local perception of the practice of underwater speargun fishing is addressed and partly explained by the fishermen's desire for physical hardship. The physical hardship undergone during the fishing practice illuminates the identification of fishermen with the stereotyped Palauan image of traditional manhood, the tough and strong fisherman (SMITH 1983, BARNETT 1960).

I have deliberately used some autobiographical data in parts of the paper⁸. This construction aims to show the significance of the 'enskillment' of fishing techniques undergone by the researcher himself in the course of anthropological research (PÁLSSON 1994). Whenever I asked local fishermen questions about their methods, techniques or tools, they often told me to first watch what they did, then ask questions because when one tries the reasons appear self-evidently. By presenting a direct extract from my field notes, I aim to show the dialogical process of learning fishing technique and the importance of non-verbally transmitted knowledge.

I begin with an outline of general fishing practice in contemporary Palau, introducing the emergence and practice of underwater speargun fishing in the second section. In the third section, I discuss the detailed process of choosing equipment for speargun fishing, showing the links between the different factors. In the fourth section, I give another example of choice making process, this time relating to the fishermen's cultural concern with appearing 'tough and strong'. In the last section, I examine this notion of masculinity in relation to Palauan cosmological understanding of the underwater world.

An introduction to contemporary Palauan fishing practice

According to JOHANNES (1981), eight fishing methods were used in Palau in the 1970's: daytime and night-time underwater speargun fishing, hand spear fishing,

⁷ According to JOHANNES (1981), the speargun that Palauan fishermen use now was only introduced in the 1940's. It is said to have been brought to Palau by Indonesian fishermen who fished in Palau's neighbouring waters, fell ill and left their ship to recuperate in Koror's hospital. Most of the fishermen I interviewed claimed that the speargun was actually introduced in the 1950's. They claim that Palau was rarely visited in the 1940s because the island was involved in the war. JOHANNES states that Palauans traditionally used long hand held spears underwater, but that the method was not productive until the Japanese introduced the underwater goggle (1981: 67). It is said that underwater speargun fishing has only recently found its high popularity. However, some of my informants remarked that, until the last twenty years, the equipment was never efficient enough to make the method productive.

⁸ I am specifically concerned with the practice of underwater speargun fishing because it was one of the most popular fishing methods at the time of my research fieldwork between April 2000 and July 2001. I was also most exposed to this method as it was adequate for a person in my age and gender to practice.

barrier net fishing, net fishing, cast netting, portable trap fishing and dynamite fishing. Except for dynamite fishing, the other seven fishing methods were still popularly used at the time of my fieldwork (April 2000 - July 2001). The distinctive social features of the practitioners such as age, social status and most importantly, gender are clearly embedded within each method. In Koror, the capital of ROP, one can see affluent businessmen and politicians going out trolling on expensive motor boats with high power outboard engines and imported modern fishing equipment to catch outside reef fish, such as yellow tuna or Barracuda. Such outings are quite costly: the amount of gasoline used in such fishing trip can go up to 50 - 100 U.S. dollars for one fishing trip, the equivalent of an average Palauan worker's weekly income. Many therefore see such fishing as a tourist attraction, lavish leisure practised only by local elites, politicians/self-made entrepreneurs or visiting foreigners. In contrast, hand line/bottom fishing requires tools preparation and skill, but costs less in terms of equipment. Boat fishing involves less risk and one therefore practises hand line fishing for the opportunity it offers to have a casual family excursion.

Palauan everyday consumption is no longer reliant on subsistence economy. Thus, many residents of Koror only go fishing on weekends or at night, when they are off from work. Those who go out fishing say that they do so in order to catch fresh fish, and 'to save money for food'. There are some (I knew less than fifteen) professional fishermen in Palau, but even they have other side-businesses, such as making and selling spearguns, or temporary work in governmental offices. However, the ocean's proximity still entices the residents and fishing seems to retain its cultural capital as 'men's work' despite the fact that most of them are only 'part-time' fishermen.

The special relationship between the land and the sea is described in terms of a neat cosmological division. This dichotomized structure is commonly seen in Palauan space/order relation schemes, such as village structures and sitting positions among chiefs in the men's house (FERREIRA 1987. FORCE 1972. BARNETT 1960). These two structurally opposed foci are often depicted as constituting the balanced cosmos of Palauan world conception. In Palauan language, the sea is generally called '*daob*', and is set in opposition to '*beluu*', the land. These binary geographic terms, however, do not apply when one talks about going to the ocean in order to fish, when the word '*chei*' is used instead of '*daob*'. '*Ak mora chei*', the general expression in Palauan language for 'going fishing', refers to the first person singular, 'I', and '*mora*' means 'to go'. *Chei* is often translated as the area between the shore and the edge of the reef, the common field for local fishing.

JOHANNES (1981) explains that the word *chei* probably suggests a specific area at sea, i.e. the lagoon, in contrast to *daob*, which refers to the sea in general. In Palau, there are several different types of reef settings and fishermen know which reef they should use with which type of method, and which part of the reef they should go fishing in. Geographically, the lagoon is the area enclosed by the low tide line of the inner edge of the barrier or atoll reef flat. The different inner lagoon geographical settings of Palau are: 1. sea grass beds of five to ten meter depth and a limited amount of coral; 2. patch reefs of five to thirty meter depth, comprising much coral and rocks; 3. channels connecting the lagoon to the outer reef slope; 4. mangrove/coastal bays aligned with the shore along the banks of rivers with muddy surface, containing the young of many species of coral reef fishes and mangrove crabs; 5. the outer reef slope, or the portion of the seaward reef that slopes into deep water (in Palau, there is a

channel between Pelelieu islands); 6. the clear outer lagoon of fifty meters depth, with larger size fish and tuna, fairly steep with moderate high coral cover⁹ (MYERS 1999). Most areas are reasonably protected from the waves and tide and contain a large area of corals with their inhabitants. Thus fishing is mostly conducted within inside lagoon areas, and this perhaps explains Johannes's translation of *chei*.

However the definition of *chei* was not explicitly given to me by my fishing partners because they hardly use the word *chei* on its own: the word is always used as part of the sentence '*ak mora chei* - I am going fishing'. If one goes out fishing in the area near the shore however, one would say '*ak mora kmeed* - referring to 'the near shore'. If one goes out further away from the reef, then one would say '*ak mora chei cheroid*'. The word, *cheroid*, means 'far' and can be used outside the context of fishing. I once asked some of my fishing friends specifically about the meaning of *chei*, and about any specific geographical connotation which might be attached to the word. All of my informants answered 'wherever you go to fish is the place called *chei*'. Evidentially, in actual practice, the landscape that fishermen visualise as their fishing area, or *chei*, is conceived of as a plurality of landscapes, classified and categorised in relation to the particular fishing methods employed there.

The practice of underwater speargun fishing

Generally, in Palau, people still recognise a strong fisherman as one who can brave the multiple hardships inherent to speargun underwater fishing, though it is not the

⁹ **Sea grass beds** - this section of the inside lagoon provides the setting for several different fishing methods: hand spear, stationary barrier net, trap, gill net, hand line fishing and underwater r fishing. This is also the area where Palauan women gather marine products such as sea cucumbers. Under water speargun fishing in the area is conducted at night, as sea grass beds are inhabited by large roving groups of rabbit fish (*Signus canaliculatus*), locally called '*Meyes*'.

Patch reefs - this section is the area in which most underwater speargun fishing, both night and day time, is conducted. Inside of the lagoon, the ridge of the pinnacle, locally called *Ngeraol*, where the coral reef begins, is the point where fishermen dive and swim along the side of the ridge. The diversity and abundance of corals, as well as fishes, is only second greatest compared with (6.) the outer reef slope, yet this section has slower current and is therefore more favourable to underwater speargun fishing. The most common fish in this area are Orange-spine unicorn fish (*Naso litiratus*), locally called *Erangle*, Parrot fish (species in the genre of *Scaridae*), locally called *Malleman*, Rock lobster (*Panulirus ornatus*), locally called *Eriut* and coral groupers (including most species in the genre of *Serranidae*), locally called *Tamakai* or *Mokas*. Palau has large lagoon patch reefs among raised limestone islands, Rock islands, where the water is less affected by the storms and has less current, so that fishermen can conduct underwater speargun fishing when the other patch reef areas are under bad weather. Common fish in this area are the surgeon fish (most species in the genre of *Acanthurus*), locally called *Masch* (HELFMAN, G & RANDALL, J. 1973)

Mangrove/coastal bays - The area is only used for trap fishing to catch mangrove crab (*Scylla serrata*), locally called *Amam*. The water does not provide enough visibility for speargun fishing because of the unsettled mud at the bottom. In the coastal bay, however, one would conduct underwater speargun fishing by just swimming off the dock. One finds octopus near the 'T dock' bay in Koror. Surgeon fish is also commonly caught in this area.

Channels - underwater speargun fishing is rarely conducted in this area of Palau. This is mainly for safety reasons: many boats pass the channel at regular intervals and the area is often reserved for the purpose of tourist scuba-diving.

Outer reef slope - underwater speargun fishing is conducted in this area only on limited occasions, although the diversity and abundance of corals as well as fish is greatest there. The strong currents make the practice of speargun fishing in this area very risky.

method that produces the greatest number of fish (MASSE 1989). The risk and danger attached to the practice of underwater speargun fishing appeals to fishermen who seek to identify with the image of 'tough and strong' men. Drawing from the symbolic registers of Palauan manhood and physicality, one could suggest that their preference for this method stems from the masculinity encapsulated in the practice of fishing with the speargun method. Interestingly, for spear fishing, including hand spear and the current use of speargun, the prowess of Palauan young boys has been a constant source of amazement to outside observers (KUBARY 1885; CLARK 1953; JOHANNES 1981; SMITH 1983).

With underwater speargun fishing, one must stay in the water for 5 hours a day and repeatedly skin dive to 5 to 15 meter depth at least 15 times per hour. One also needs to have the actual physical strength to set the speargun trigger as one swims in strong current while seeking fish. The method is practised by men aged between 15 to 45 years old. I was told by Palauan men who do not practice the method that the physicality of the practice makes it difficult for it to be pursued by anyone outside this age span.

Underwater speargun fishing can be conducted both during the daytime and at night. The two or three hours of incoming tide are the best time for underwater fishing as the reef and lagoon water is at its optimal clarity, and many fish move from drop-off regions to shallower and more accessible reef areas. Furthermore, the time of neap tide – the first and the last quarter of the moon-, is the best time of the month for underwater speargun fishing as the underwater visibility is greatly improved at that time due to the reduced tidal current. The lessened turbulence of water also requires less physical effort from the fishermen at that time (JOHANNES 1981:53)¹⁰.

With my regular fishing group, all of whom were residents in Koror, fishing was conducted at least three times a week, generally twice during weekdays and once on weekends. Fishing around mid-week was common practice among other local fishermen; they often said that they had run out of fresh fish by that time. Each fishing trip was usually sequenced in two or three sessions, which the fishermen called 'dives'. We often covered two or three different spots within the area in which we started fishing. We would move to a second spot, separated by a five minutes crossing from the first spot, in order to make our 'second dive'. On one average weekend we made at least 'four dives' between 8:00, before the first low tide, and 18:00 before the sun went down. Each dive often lasted longer than the night fishing trips that is roughly two hours.

The outing was never planned in detail as fishing was often decided upon spontaneously. This flexibility is a particular feature of underwater speargun fishing, and conditions of tide and weather do not affect its practice: fishermen should always be able to find a suitable place to fish. Sometimes, in heavy storm weather, we conducted fishing inside rock islands, where the impact of the storm was lessened. A good underwater speargun fisherman could have more than fifty potential fishing spots. Thus, checking the weather and tide is important to designate the location of the fishing spot and to confirm that it is accessible by motor boat; some places surrounded by shallow coral reefs are only accessible when the tide is high. The ability to locate an

¹⁰ The information on the fluctuations of high and low tide, and lunar phases can be now checked from the calendar produced by a local museum and the national weather answer phone report provided forecasts of sea conditions.

adequate fishing spot in various kinds of weather and tide condition is considered to be a skill which good fishermen should possess.

When fishermen came back to the dock, people gathering there would generally ask where they went to, '*ke mola ?*' - Where did you go?'. Although this is a common question between fishermen, they are not supposed to answer it in much detail. Indeed they say that preserving the secrecy of a good fishing spot is critically important. In reality though, they do tell each other where they have been and what fishing methods were used. However, it remains difficult to locate the exact fishing spot from these accounts because of the general instability of the seascape and the lack of landmarks on the ocean.

Earlier work has suggested that the exploitation of underwater resources imposes heavy cognitive demands. 'Fishermen are not only forced to create cognitive maps to find the way and to locate fishing spots; they must also make descriptive models of an environment about which information can only be obtained from indirect observation' (PÁLSSON 1982 summarised by PÁLSSON 1991). This is not the case, however, with underwater speargun fishing. One can directly look through the water in order to get the necessary information about the fishing spot. With the help of motor boats, it is now easier to change fishing spots. Thus, if one finds a spot that does not have enough fish, one can easily move to find to a more promising location. In fact, a fisherman generally keeps moving inside the water while fishing by snorkelling on the surface, and assessing different spots.

Nevertheless, although one can extract information about the fishing spot through direct observation, one would not be able to fish properly without having prepared the adequate fishing gear. Fishing in different geographical spots requires different arrangements for gear and techniques. One could imagine a fisherman moving to other spots to find an adequate spot for his gear, but Palauan fishermen would certainly not do so, as this creates extra-work for other fishermen and certainly undermines their reputation. In the next section I will explore the variation in fishing gears and technique in order to present the complexity involved in the selection of fishing spots.

Choice of equipment for underwater speargun fishing

In the early days of underwater speargun fishing in Palau, the equipment, such as underwater glasses and fins, was of such limited quality that fishermen struggled to catch fish. On many occasions, while I talked about the price of diving equipment sold in a shop with middle aged fishermen with whom I fished regularly, I was told how different underwater speargun fishing was during their childhood, in the late 1950's¹¹. The fishermen said that they used very old masks not far removed from those exhibited in the museum¹², made of wood and glass, which the Japanese pearl traders had introduced to Palau in the 1930's.

The spearguns which Palauan fishermen use now are usually locally made¹³, and are classified in two primary categories, night and day time spearguns. The major technical difference between these two resides in the different lengths of guns employed; the length of the night speargun is generally between one and one and half

¹¹ The other fishermen all agreed with my fishing partner that the hardship of underwater speargun fishing was much greater then, because of the rudimentary level of technology.

¹² At the time of my fieldwork, there was a pair of masks exhibited in the Epison Museum, a privately funded museum located in Koror.

meter and daytime spears guns length ranges between one and half and two meters. The longest speargun has a shooting range of two to four meters underwater. The short night gun has less than half of this range¹⁴. The bodies of the guns are made of different kinds of wood and the shaft used in guns is mostly imported from Guam. Night guns tend to be made of heavy wood that cannot float in the water, whereas daytime guns are made of light wood. The styles of shafts vary greatly in terms of length, material, and most importantly, in terms of micro mechanisms.

Certain personal tastes are reflected in the choice of equipment, and fishermen generally prefer dark colours when they choose their fins and masks: blue and black are favourite because these colours are similar to the colour of the sea underwater and thus less detectable by fish. However, another fisherman gave me a different account for his preference in colour: he did not favour bright colours since these are primarily used by tourist divers. The colour used by tourists' functions to attract the fish, he said, but only to watch them¹⁵. This example shows the fishermen's need to distinguish themselves from those who go underwater for other purposes, mainly tourists/divers.

The preparation for underwater fishing does not only involve taking the required gears; each equipment also has to be precisely prepared to increase effectiveness, as slight negligence in the selection of equipment including speargun, graves, fins, waterproof torch, weight and device to keep caught fish could cause a unfortunate result.

For instance, there are two types of devices used for storing caught fish: the '*uki*' (float, the word is appropriated from Japanese) and '*buntum*' (a basket). The '*uki*' is a floating device often made out of empty plastic containers of liquid washing powder, attached to a cord (*iengel*) connecting the float to a short metal (copper) spike about the size of a pencil. A fisherman carries this device inside the water by fastening the spike in his diving belt. Then, when the fisherman shoots a fish, he threads the spike and cord through the mouth and out of the gill opening, or through the hole made by the spear. In this way, he can drag caught fish and continue fishing.

The *buntum* is generally a 1m polystyrene container, or a plastic water container drum cut into half, attached to a cord that is tied to the fisherman's diving belt. The length of cord attached to *buntum* is about two to five meters whereas the *uki* usually has an eight to ten meters long cord¹⁶ attached to it. Johannes (1981) explains that one can minimise the risk of shark attacks by storing fish away from the body of the diver. The *buntum* will indeed keep fish away from the fisherman's body without attracting sharks, as their use stops the blood from draining out from the speared fish into the water.

¹³ One tends to buy them from certain fishermen, who are famous for the craft. The cost of the speargun varies in accordance to its size, but generally night guns cost around forty to sixty U.S. dollars, and day guns cost between one hundred to two hundred dollars.

¹⁴ The short gun is sometimes used in daytime fishing, when the fishermen aim to catch creatures staying inside rocks such as octopus, groupers and lobsters. On contrary, long guns cannot be used in night fishing, simply because fish are approachable at a close distance at night and the long shooting range is of no use. At night, the fish sleep close to rocks, or inside coral, where the daytime long speargun has so much power that the shaft may penetrate into the rocks and get stuck there.

¹⁵ The fisherman's comment made was analogical: 'tourist divers see the underwater world as if it was an aquarium, whereas I go inside the underwater world to catch fish, not to watch it'.

Besides the risk of shark attack, which is quite a minor concern for most of fishermen as such incidents rarely happen¹⁷, I recognised the advantage of using *uki*, as opposed to *buntum*, in different geographical settings and for keeping certain types of fish. The use of *buntum* was often observed in shallow areas whereas the *uki* is more often used while fishing in deeper waters. This is because using *uki* saves the time to pull the ten meters cord for each fish caught. Moreover, when conducting speargun fishing on sea grass beds, one always uses *buntum* because the rabbit fish that thrives there has venomous fin spines, and one can easily be injured by holding them.

A more specific selection of tools is made by fishermen in the detail of their tool settings, for instance in the type of speargun triggers used. The preferences manifest in this selection are determined by reasons that one may find difficult to understand because the selection is made for a particular fishing technique. Such techniques are not described verbally but, as discussed previously, only observed in practice. In the following section I wish to present an example of tool selection, i.e. the choice of a particular type of speargun trigger.

Choosing specific techniques and micro mechanism of fishing tools

The most vital skill one needs for underwater speargun fishing is knowing how to approach fish close enough in order to shoot. The fisherman spends most of his time on the surface of the water, moving about breathing through his snorkel. Upon reaching the diving point, fishermen arrange the course of their dive if they have someone staying on the boat. The current is often strong, in particular close to the outside reef. He therefore has to know the movement of the currents and tide to designate his fishing route, as he may otherwise not be able to come back to the boat or to the shore¹⁸.

Usually, a fisherman who knows the area will lead the rest of the divers, and information will not be shared or contested prior to the actual trip. Fishermen often move along together side the high reef, looking for fish they can approach. Their swimming speed is fast, and it is often said that the faster fishermen are, the better their fishing skills. They explain that one should cover as much area as possible to increase the chance of catching fish, rather than stop in one position and wait for the prey to come. When a Palauan fisherman recognises someone as a fast shooter, it means that the fisherman makes a quick decision to shoot, and then moves on to the next area swiftly.

¹⁶JOHANNES (1981) also found the same device made of bamboo at the time of his research. I saw some fishermen using the same device and asked them if they preferred bamboo over plastic, but received no particular explanation.

¹⁷Fishermen say that sharks would not be attracted if the fish were dead, thus a fisherman usually spikes the fish again after it is caught catch to store it in the *uki*. The choice of use between *buntum* and *uki* also depends on the fish targeted.

¹⁸Sometimes a fisherman takes his friends, who often have no skill for underwater fishing, to be in charge of driving his boat to follow him. Those who drive the boat can also be younger members of the fisherman's family, mainly his sons, who learn different fishing spots through this experience.

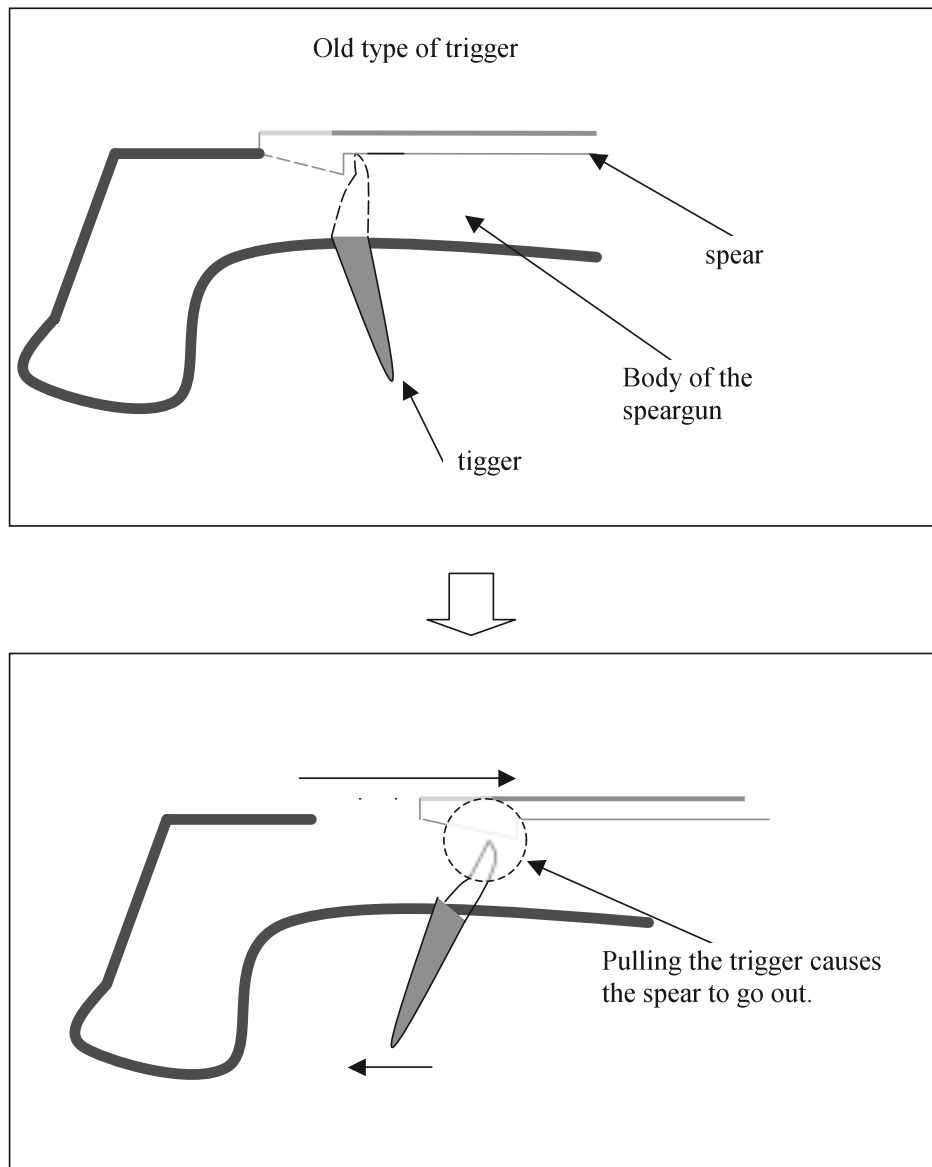


Fig. 1. Mechanism of old type of trigger of speargun.

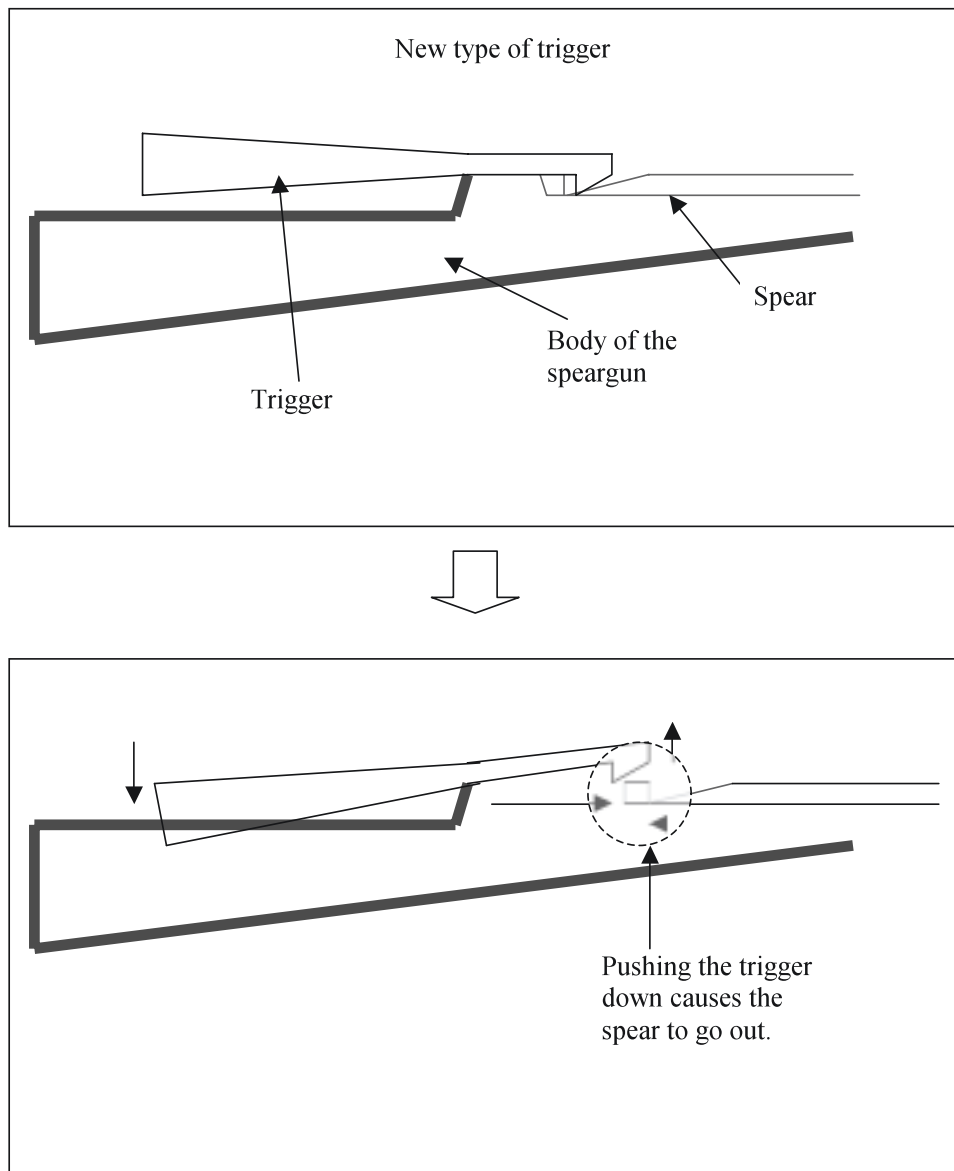


Fig. 2. Mechanism of new type of trigger of speargun.

As previously discussed, learning how to approach fish close enough to shoot is considered the fisherman's most important skill. Different approach tactics are applied, as fish react to fishermen with spearguns differently. For example, the 'tamakai', or coral grouper, should not be approached from behind, as it is more aware of chasers following it from behind, but would not move if approached from the front. One fisherman told me that it is important not to show the bubbles coming out of your snorkel as fish are scared of the bubbles. He said that I should remove the snorkel from my mouth as I dive to approach fish. I confirmed the reliability of this knowledge by interviewing several different fishermen and most of them agreed with it, yet during actual fishing practice I hardly saw them practising the technique. Again, I pointed out to them that they did not practise this technique, and then they told me that it depended which fish one was aiming at. They argued that, when aiming at smaller fish of 20-25 centimetres, one should not worry about bubbles. Rather, I should be shooting fish in short time, as these targets usually stay in shallow water. Fishermen say that fish quickly understand that they are targeted, and become cautious of fishermen's movement.

Specific techniques to approach certain kinds of fish also determine the setting of the minute equipment mechanism. For instance, spearguns presented different types of trigger systems. One type of speargun has a trigger attached to the bottom of the guns' main body like a rifle gun, and they are usually found among early made spearguns (See Fig. 1). In contrast, more recent types of spearguns have triggers attached to the top of the guns (See Fig. 2). Most fishermen in Palau use the latter setting of trigger system yet some still use the former. Technically, the choice of trigger systems makes a significant difference in terms of shooting range as the later type of trigger allows a fisherman to extend his arm as he aims to shoot, whereas the former requires holding the speargun closer to the body. However, the choice of trigger system was not made simply for their personal familiarity for either system but they are also determined in conjunction with other specific type of fishing technique. Below is an edited extract from my field note which describes a specific shooting technique¹⁹.

John was about 60 years old and had spent more than twenty years in different regions of Micronesia, mainly in Saipan. He came back to Palau about a year and half ago and earns his living by fishing. The man made his speargun himself and preferred the old type of trigger because, as he explained, it is more appropriate to have the trigger at the bottom of the gun so that one can aim as accurately as one does with a normal rifle gun. In contrast to this opinion, other fishermen explained that they stopped using the old type of trigger because the new trigger in comparison to the old, gives them a larger shooting range. They say that one can extend his hand fully with the new type of speargun, and that the tip of the speargun can be closer to the target. In this way, their shooting can be more accurate.

¹⁹ Using the format of field note extracts is aimed at reducing the allegorical effect of the ethnographic narrative. The story given here was based on the subjective experience of the researcher. Therefore each discourse given to the researcher by different fishermen as response to different question asked at different time are composed only through the researcher's experience. I hence aim to show the description on the act of linking these discourses as 'raw' as possible while hoping that this presentation can be a part of potential enplotment for creating ethnography (CLIFFORD 1986).

Moreover, many fishermen said that the fish have now grown familiar with the speargun, and that they have to maintain more distance between them so that the fish will not run away. At the same time they also complained that the number of fish in Palau has decreased in the last five years and that it is becoming more and more difficult to catch fish.

I asked my partners what they thought about the old trigger and why only John used the ancient one. One of them answered that John simply did not fish in Palau for a long time, he was always in Saipan, and just did not know how to make the new trigger.

But this did not present the full picture. The old fisherman did know how to make the new type of trigger: he had helped me repair my speargun and knew the mechanism of the trigger. He had even told me he could make one. Moreover, I observed him going out fishing more than three to four times a week, more than the average of any professional fisherman. His knowledge of Palauan sea and fishing could therefore not be lesser than that of other, less experienced, fishermen. Surely he knew enough to judge which speargun was more appropriate for contemporary Palauan fishing. I was consequently convinced that the choice of the speargun was just the result of his individual preference and nothing else.

*Later I had an opportunity to go out fishing with both my fishing partner and John. Our party of four included John, my fishing partner, his friend, and I. All of us except John used the new type of trigger. We were about twenty minutes away from Koror, towards the south of the islands. The fields we had chosen averaged at three meters depth, a little less than average for underwater speargun fishing. In this area of relatively shallow water, we found many orange-spine unicorn fish (*Naso Lituratus*), locally called 'erangle', one of the most liked fish in Palau. This fish sold well on local fish markets, where John usually sold his catch. I was the last one to dive among the four of us, and as I reached the diving point - about fifteen meters away from our boat - the other three had already caught their first fish. There was only about five minute's difference between the others and I. I dove to about three meters below the surface to look for a fish to shoot and found one orange-spine unicorn fish strangely floating in the middle of the water. Knowing that the fish would swim away once I got close, I remembered that my fishing partner had told me to shoot anything I could without thinking, as the day's fishing was for 'business' and 'making money'. I shot the unicorn fish without any hesitation and the shaft went right through the middle of its body.*

Oddly, the fish stayed still when speared. I wondered what had happened, came close to the fish, and found it was tied to the coral with a string of wire. The fish had been shot once before and had been left, half-alive, in the water. A few seconds after this, the old fisherman approached me with smiling through his underwater mask, then I realised that I shot his decoy fish, that he use to lure other fish (so that he can shoot then as they approach to the decoy fish). When we were both on the surface of the water, John burst into laughter, although he clearly did not intend to insult me. Rather, he complimented me by saying that I did not hesitate to shoot the fish. He had been watching me all along.

The choice of the trigger that John had made was determined by his choice of technique. To use decoy fishing technique, (which fishermen display an already caught

fish tied to coral with wire and shoot fish approaching the decoy fish²⁰), *one needs more accuracy in shooting; this factor is more important than shortening the distance between the fish and the tip of the spear. After this fishing session, he told me that he often used the technique to catch unicorn fish, and other fishermen told me that they also knew about the method.*

The fishing method used by John was fundamentally different to other fishermen's: he waited to shoot, as opposed to chasing the fish in order to shoot it. This difference, the lack of physical mobility inherent to John's technique was not in fact appreciated by other fishermen, although he had caught as many fish as the others. The other fishermen, my partners, explained to me that this fishing method is not really popular in Palau as there are enough fish to catch without tricking them. Then they added that John could no longer chase fish and therefore he had to make them come close to him.

Different reasons given by other fishermen in relation to John's choice of trigger sequentially lead us to recognise key variables in tool selection. In the beginning, other fishermen suggested that John's choice was due to his personal background, and the fact that John had not been in the country for some time. In response to my disbelief, they then claimed that John only used the older trigger because he did not know how to make the new type trigger. Eventually I had to find the reason for John's choice of trigger system through practical experience. They never pointed out the fact that this particular trigger system is advantageous for decoy fishing technique. Indeed, when John used the trigger and technique with decoy fishing technique, other fishermen did not appreciate it and surely disliked to use it because this technique would imply less movement, less engagement with physicality.

The physicality of fishing and Palauan masculinity

In the earlier section I have pointed out that the physicality of speargun underwater fishing predetermines the characteristics of the practitioner. This is reflected in the gender division of fishing practice. In Palau, hardly any women practise underwater speargun fishing²¹. It is common now that women go out fishing as a leisure activity, yet they only practice hand line fishing and it is not common for women to engage in diving.

FERRERIA's study of Palauan cosmology may suggest a cosmological explanation for the phenomena of female disengagement from fishing practices (1988). According to him, the Palauan cosmos is construed with different levels of dichotomised structures which oppose the worlds below and above sea. He suggests that the underwater world is a world of death. Reflecting upon this, it may perhaps be understood that Palauan women, reared in their mythological beliefs, should not take part in any underwater fishing activities for it may have a negative influence on their fertility. Similarly, it is said that fishermen should not sleep with women prior to their fishing trips. Traditionally, it is considered that Palauan men are supposed not to associate with female company when engaged in fishing activities. The belief may

²⁰ This brief explanation of decoy fishing was added in the course of editing the field notes much later than it was initially written during my fieldwork.

²¹ During my fieldwork, from April 2000 to July 2001, I only heard of two women practising this method. One of them had already died, and I never had the chance to fish with the other. The female disengagement from fishing activities is prevalent in underwater speargun fishing.

reflect the cosmological conceptualisation that FERRERIA (1988) presents, i.e. that the underwater world should not be interfered with by one who produces life. Nevertheless, among the fishermen I interviewed during my fieldwork, FERRERIA's interpretation of the Palauan cosmological world did not seem to be common knowledge.

Besides the cosmological understanding, there is a common belief that one should avoid spending time in bed with the opposite sex before they are engaged in fishing. Jokingly, the fishermen I associated with claimed that one of us probably slept with his wife the night before fishing when we could not catch as much as we were supposed to. Once, I asked an old experienced fisherman for the account of the taboo explaining why fishermen should not sleep with women before going fishing. He answered that it might just have been a way for his ancestor of giving us a practical tip to reserve our physical energy for fishing. He said that if a man stayed with a woman all night, he would probably not get much sleep, and would therefore be less 'strong' the next day. After giving me that account, him and his friends laughed and said that, of course, this was not true for strong men like him: he said he had tried many times, and proven that sleeping with a woman does not affect his fishing at all.'

The physical strength emphasised in the practice of underwater speargun fishing coincides with the practitioner's toughness. All fishermen who practice underwater speargun fishing are known as tough and tend to present themselves as strong men. Many of them claim, regardless of the cosmological understanding of Palau presented by FERRERIA (1988), that this is because they feel strongly about the risk involved in diving, especially at night or when fishing at the end of the reef, where the currents are much stronger.

As it has been presented so far, the Palauan understandings of the underwater landscape is not structured merely in terms of the cosmological belief, but clearly classified in terms of fish inhabitants and required tools. The only thing that seems to me 'unpractical' was the physicality involved in the practice. Arguably, the negative comments on the use of the old man's trigger given by other fishermen were linked to the lack of hardship inherent to the technique. This very physical demand is what constitutes the symbolic capital attached to underwater speargun fishing.

Conclusion

In this article, I have explored the complexity involved in the choice of methods, equipment and techniques in contemporary Palauan fishing by focusing on underwater speargun fishing. Through this general description of contemporary Palauan fishing, I have argued that methods practiced at present have both social and functional characteristics. I then examined three choice making processes involving the micro-mechanism of speargun fishing. Firstly, I looked at the choice of diving gears and found that fishermen generally prefer to use dark colour equipment simply to mark their identity against tourist divers who tend to wear light colour gears. However, this symbolic level of understanding is found to be irrelevant in relation to the more minute choice of equipment, such as the *uki* and *buntum*. In the process of choosing between those two different devices, the targeted fish and fishing location, particularly the depth of water, become key factors and the decision is made purely on the basis of functionality.

On the contrary, in the process of choosing speargun trigger systems discussed in the fourth section, the choice has symbolic underpinnings and is then carried out with functional reasons in mind. On one hand, the old fisherman, John, uses the old trigger system because of the technique's advantage while fishing with a decoy. On the other hand, other fishermen's general preference towards the new trigger system did not hinge on subtle functional differences but rather on their need for physical movement while fishing. This was a typical example of fishermen in Palau seeking physical hardship, and I have argued that this need for physical movement is a prerequisite in fulfilling their desire to be identified with 'tough and strong traditional Palauan men'.

Nevertheless, this emphasis on the 'physicality of fishing' is not simply an enactment of gender division based on Palauan cosmological belief. Often, pragmatism takes over these beliefs, as I have shown with the fishermen's attitude to common superstitions related to women's company in prior to fishing. Here one should remember that the significance and demand for physicality is specific to underwater speargun fishing. The need does not arise with other fishing methods, both as a functional condition for the practice, or as the symbolic label of 'masculinity'.

Anthropological studies of technology have argued that "technological choices may well bear on items or elements of material culture, which necessarily produces real physical effect" (LEMONNIER 1996). This theory offers a possible explanation for the popularity of underwater speargun fishing among contemporary Palauan fishermen: one might consider the cosmological structure to be the necessary core to establish the required 'physical effect'. On the other hand, one may suggest that the actual practice of underwater speargun fishing itself has established the necessary 'physical effect' so appealing to the fishermen. As BOURDIEU (1990) suggests, a person's act should not be apprehended solely in the light of its function, but rather through its practice, and the act itself becomes constituted through the way in which the person acting perceives his/her world. Applying BOURDIEU's theory in order to resolve the contradictions inherent to the practice of underwater speargun fishing, we might consider that the need for physicality attached to the methods' functional aspect should then have rooted the feeling of a 'real physical effect'.

The problem then becomes: what in fact can we 'discover' from this rather tautological explanation besides the fishermen's agency in giving cultural legitimacy to their practice? As I have demonstrated in this article, the fishermen's choices and attitude to changes can be both pragmatic and culturally specific. The tension between these two factors is dialectically negotiated through practical choices and their attitude towards these choices. The contribution which anthropological study can make to understand dynamic phenomena such as these is therefore embedded in its ongoing engagement with people's practice.

Underwater speargun fishing is thought of as traditional by contemporary Palauan fishermen not simply because it involves physical hardship. More importantly, the practice of fishing allows them to participate in what is the experience of a 'real physical effect', which is required in the context of traditional fishing practice. This then makes them disprove any technique that reduces the chance of being engaged with this experience. In other words, the constant assessment of fishing practice in terms of physicality becomes the meaning of the experience itself. Therefore the techniques and choice of tools employed, as well as the criteria through which their appropriateness is measured, are not factors subjugated to a pre-fixed notion of 'traditional fishing'.

Rather, they are organic elements which, together, create a sphere of 'traditionality' in which creativity is not only allowed but inevitable. Thus the fishermen's ongoing engagement with practice is innately the regenerative force to maintain the experience of 'becoming a traditional fisherman'.

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