

Culture, Cognition, and Communication : Fishermen's Location-Finding in L'Anse-à-Canards, Newfoundland

Gary R. Butler

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Résumé de l'article

De façon générale la cognition comprend le processus mental par lequel un individu applique des règles culturelles à l'interprétation de son monde. Pour une société de pêcheurs il est essentiel qu'on possède une connaissance détaillée de cette partie de l'environnement qui influence le plus la survie. La perception du groupe de sa topographie physique ne correspond pas nécessairement à celle de la science.

Cette étude a pour but d'identifier la carte cognitive des pêcheurs de L'Anse-à-Canards, à Terre-Neuve, d'en définir la forme et les fonctions, ainsi que d'examiner les questions de transmission, de communication et de standardisation de ces connaissances. On soulignera en même temps jusqu'à quel point il importe au chercheur d'être au courant de ces connaissances.

Articles

Culture, Cognition, and Communication : Fishermen's Location-Finding in L'Anse-à-Canards, Newfoundland

Gary R. BUTLER

L'Anse-à-Canards is a small, predominantly French-speaking community of approximately thirty families located on the northeastern-most point of Newfoundland's Port-au-Port Peninsula. Like the residents of so many other such coastal outports in the Province, the people of L'Anse-à-Canards rely heavily upon the inshore fishery for their livelihood. The skills and techniques used in this pursuit are in large part those which have been developed, refined, and transmitted across generations of fishermen. Of these skills, perhaps the most important is the fishermen's ability to locate, accurately and consistently, the most profitable of the fishing grounds which lie offshore from the community. The mechanics of this location-finding technique, the process of cultural cognition which forms its basis, and the significance of the uniformity of its application by L'Anse-à-Canards fishermen, are the subjects to be considered in this study.

I

In very general terms, cognition involves the mental process whereby the individual applies cultural rules for the meaningful interpretation of his world and its subsequent division into significant discrete categories. It is obvious that for any group to function profitably, its members must possess fairly detailed knowledge of that part of the environment which most influences the group's survival. However, the interpretation of the environment stemming from the group's exploration of and experimentation with its immediate world

need not correspond to the topography as it would be defined by empirical science. Rather, through the interplay of cultural cognition and environmental perception, a reality is created. In his discussion of the psychology of such perception, William H. Ittelson writes :

The way one views the environment is... a function of what one does in it, including what strategies are used in exploring and conceptualizing it. And what is done in the environment represents, in turn, a choice among many alternatives, the nature and scope of which are progressively restricted by previous, frequently irreversible decisions. It is not reasonable to say that environment is experienced the way it is because one chooses to see it that way. In this sense the environment is an artifact created in man's own image.¹

The knowledge such environmental “creation” represents, that is, the abstract ideation of an internal picture of the world which the individual possesses, is what is commonly referred to in anthropology as a mental, or cognitive, map. Downs and Stea elaborate on this concept as follows :

Most importantly, a cognitive map is a cross section representing the world at one instant in time. It reflects the world as *some person believes it to be* ; it need not be correct. In fact, distortions are highly likely. It is *your* understanding of the world, and it may only faintly resemble the world as reflected in cartographic maps or color photographs.²

In addition, a cognitive map is the representation of the “everyday spatial environment : everyday in the sense that it is the world that we interact with regularly and that serves as the normal setting for our activities.”³ Given these basic concepts, it should naturally follow that the more important the interaction between the individual and his environment, the more detailed will be his cognition of it : increased familiarity will be engendered by frequency and significance of contact. This is particularly true if the environment is the source of the individual's livelihood.

Naturally, the cognitive map conceived by an individual need not include any form of nomenclature for it to be of use to that individual. However, in an environment occupied by a culture group whose members share similar activities and similar mental maps, the communication of details is essential if reference is to be made to environmental features and locations. In such cases, cognition alone

1. William H. ITTELSON, *Environment and Cognition*. New York, Seminar Press, 1973, pp. 17-18.

2. Roger M. DOWNS and David STEA, *Maps in Minds: Reflections on Cognitive Mapping*. New York, Harper & Row, 1977, p. 6.

3. *Ibid.*, p. 7.

is inadequate and must be complemented by a convenient communicative technique, the most obvious of which is nomenclature. This permits the verbal communication of essential knowledge in terms which are meaningful to the members of the culture group. Indeed, such communication can possess its full significance only for those individuals having a common conception of the environment and of the names which designate its various features. The absence of either of these components renders effective communication difficult, if not impossible.

Cultural cognition as it relates to the physical environment is, then, a four-stage process involving perception of environmental features, discrimination of significant detail, cognition of a mental map, and expression of its contents. The remainder of this article will explore this process by examining the manner in which it operates among L'Anse-à-Canards fishermen.

II

It is clear that although the community of L'Anse-à-Canards is little more than one hundred years old, its inhabitants are of a much older fishing tradition. For the most part, they trace their descent from those French fishermen and workers who participated in the cod fishery during the mid- and late-nineteenth century. During the period of France's control of the fishery (a control which ended in 1904), permanent settlement of the so-called "French Shore" was officially prohibited by the English government. Despite these restrictions, numbers of French nationals, unhappy with the working conditions to which they were subjected and not wishing to return to France after the fishing season had ended, jumped ship and hid in the wooded areas along the shore until the fleet had returned home for the winter. As the numbers of deserters increased and the sanctions against settlement became less rigidly enforced, small communities were established. L'Anse-à-Canards was one such community.⁴

Fishing remains by far the principal occupational activity in L'Anse-à-Canards, as, indeed, it is in most Newfoundland outports.

4. For a fuller discussion of the history of the French presence on the Port-au-Port Peninsula, see Gerald THOMAS, *Stories, Storytelling and Storytellers in Newfoundland's French Tradition: A Study of the Narrative Art of Four French Newfoundlanders*. Unpublished Ph. D. dissertation, Memorial University of Newfoundland, 1977.

Typically, fishing is conducted in small (5 m. to 6 m.), open motor-boats and is restricted to the inshore area, seldom at a distance of more than twelve miles (20 km) from shore. Thus, the coast remains in sight of the fishermen at all times when weather permits, a factor which is of vital importance to the fishermen's success. The crews consist rarely of more than two individuals who are usually related by blood or by marriage. A father will fish with his son, a brother with his brother, or a man with his son-in-law. There are some cases of unrelated partners, particularly among bachelors. One crew consists of a man and his wife but this is an isolated case, as women do not ordinarily participate in what is generally considered by both sexes to be an exclusively male-oriented activity.

Although several varieties of fish are sought, cod is the staple of the industry in L'Anse-à-Canards. A number of techniques are employed, including the use of cod traps, trawls, and hand-line and jigger. The nets and trawls are set in place, hauled, and reset every three or four days; the remainder of the fishermen's time is devoted to cod-jigging. Most of the fish caught are taken using this last method, owing to the unpredictable feeding patterns of the cod. Mobility and a knowledge of the location of the fishing grounds ("les fonds de pêche") are therefore essential, as the fish must, quite literally, be pursued. A day's catch of 700 to 1000 pounds is considered quite successful and a catch in excess of 1200 pounds is exceptional. The fish is sold at a "store" located on the shore where the fishermen beach their boats each night; from there, it is transported to the fish processing plant some fifteen miles away.

As mentioned above, a major concern of the fishermen of L'Anse-à-Canards is the location of those fishing grounds where the chances of securing a successful catch are maximized. The fishermen must know what grounds are potentially available and how to locate these grounds upon the open water. Possessing neither sophisticated navigational and sounding equipment nor the technology for its application were such equipment available, the fisherman resorts to the traditional system of location-finding — his cognitive map. Using this system, the fisherman takes as reference points significant features on the land and, through visual triangulation with the point from which he leaves shore, he can establish his relative position on the water with a fair degree of accuracy.

The system employed in L'Anse-à-Canards is what elsewhere has been referred to as the "one-line-position method"⁵. The key to the

5. Tadataka IGARASHI, "Fishermen's Location-finding in the Marine Environment". In Hitoshi Watanabi, ed. *Human Activity System: Its Spatiotemporal Structure*. Tokyo, University of Tokyo Press, 1977.

success of such a method is the fisherman's maintaining a course at right angles to the shore as he leaves it. To the southwest of L'Anse-à-Canards are two distinctive outcroppings, or capes. As the fisherman increases his distance from the shore, the relative positions of these two capes change, and by lining up landmarks ("les marques") on each cape, the fisherman is able to determine his position. Figure 1 below represents the nearer of the two capes employed in this technique, while figure 2 represents the cape located immediately behind it. The templates reproduced here were drawn by a sixty-year-old fisherman of L'Anse-à-Canards and, as such, represent this man's mental map.

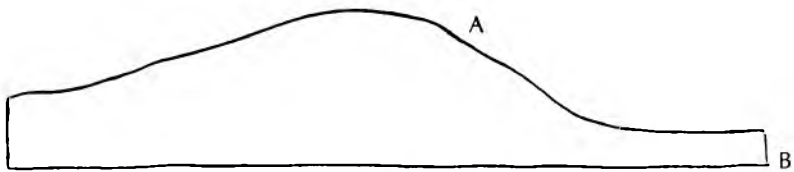


Figure 1

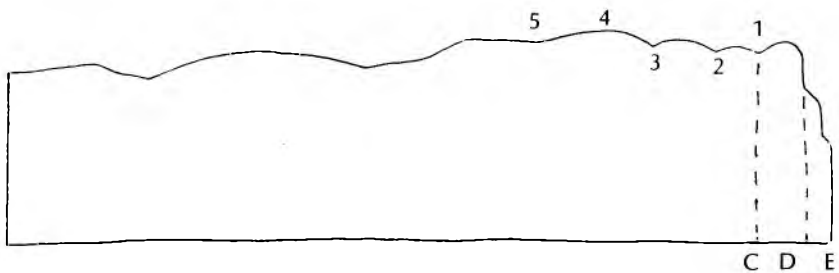


Figure 2

In all, ten fishing grounds are recognized and located using this technique of cognitive mapping.

Ground 1

The first fishing ground is located as Cape no. 2 first comes into view from behind Cape no. 1.



Figure 3

This position is named “à découvrir le cap” or “open the cape” a descriptive name referring not so much to the landmark configuration as to the corresponding location on the water from where it is seen.⁶

Ground 2

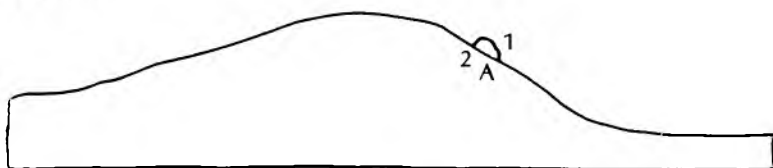


Figure 4

“la première coche (à ouvrir le cap)” of “first notch open the cape”

Ground 3

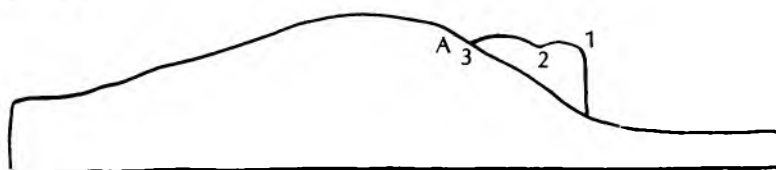


Figure 5

“la deuxième coche (à ouvrir le cap)” or “second notch open the cape”

6. The mark names given here are those current among the fishermen of L'Anse-à-Canards, in both French and English. Certain of these names are also actual place-names on the shore; therefore, to avoid confusion, the landmarks have not been capitalized.

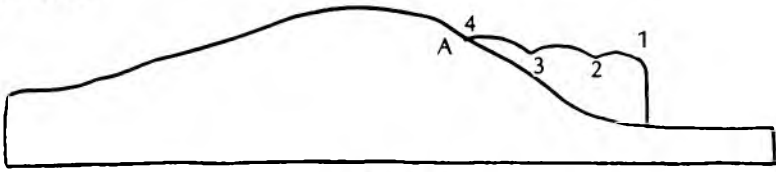
Ground 4

Figure 6
 “le dos de baleine” or “whale’s back”

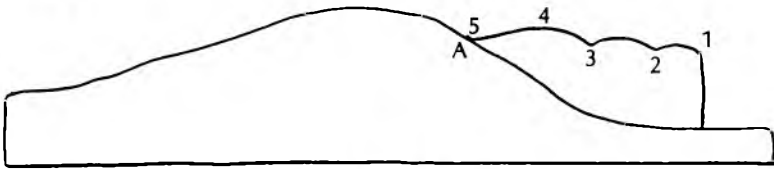
Ground 5

Figure 7
 “le creux de dos de baleine” or “the deep of whale’s back”

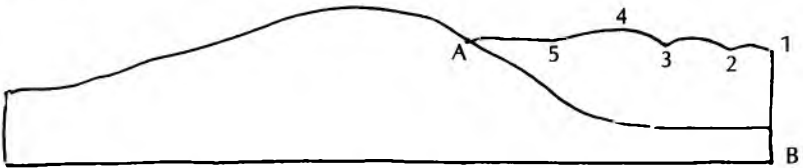
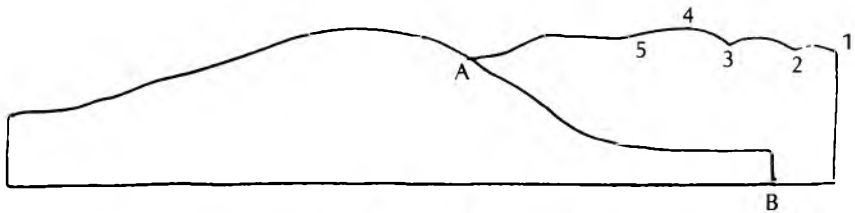
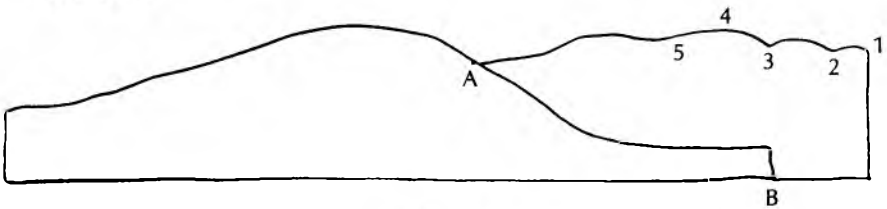
Ground 6

Figure 8
 “les deux caps en ligne” or “two capes even”

It is to be noted that at this point, a new initial reference has been chosen for lining up capes 1 and 2. For grounds 1 to 5, points on cape 2 were lined up as they appeared from behind the central promontory of cape 1 (i.e. from behind point “A”). For grounds 6 to 8, point “B” on cape 1 is the new initial reference mark.

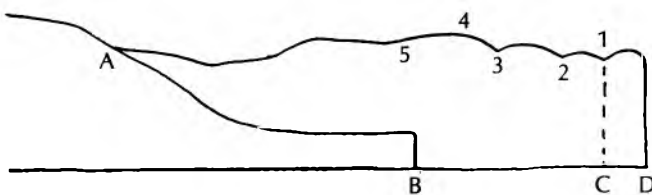
Ground 7**Figure 9**

“la première coche après les deux caps en ligne” or “first notch after two capes even”

Ground 8**Figure 10**

“ruisseau à caribou” or “caribou brook”

(This is the last of the fishing grounds located by means of the one-line-position method. The remaining grounds are determined as various features become visible from around the tip of cape 2).

Ground 9**Figure 11**

“cap carré” or “plumb cliff” (C → D)

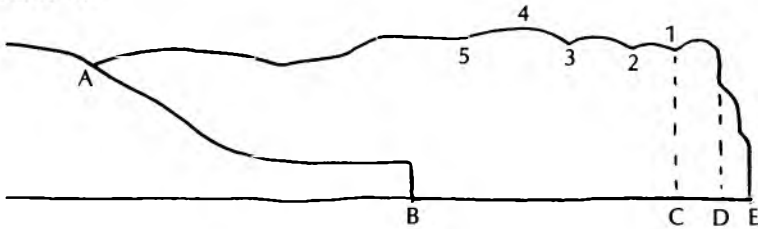
Ground 10

Figure 12
 "les échelles" or "the ladders" (D E)

Table 1 below provides a listing of the fishing grounds located through use of this technique. The distances are those supplied and deemed correct by the informant.

TABLE 1
Summary of location-finding technique

Ground	Reference points for determining location	Distance from shore
1	Point "1" appears from behind point "A"	1 (mile) *
2	Point "2" appears from behind point "A"	
3	Point "3" appears from behind point "A"	
4	Point "4" appears from behind point "A"	
5	Point "5" appears from behind point "A"	
6	Point "B" lines up with point "C"	2
7	Point "2" lines up with point "B"	3
8	Point "3" lines up with point "B"	4½
9	Face "C → D" appears around tip of cape 2	9
10	Face "D → E" appears around tip of cape 2	11

* 1 mile = 1.6 km.

Once a particular fishing ground has been located, the fisherman can then use his compass to navigate on a course parallel to the shore in either direction. This owing to that part of the fisherman's cognitive world view which holds that these grounds themselves run parallel to the shore. Hence, once the desired fishing ground has been located, the landmarks may be ignored. Obviously, such a system of location-finding depends entirely upon the point on shore from which the fisherman disembark. Leaving from a point farther north-east would increase the distance one must travel in order to

line up the various marks. Similarly, this distance decreases proportionately as the point of departure approaches the position of the two capes to the south-west of L'Anse-à-Canards (fig. 13).

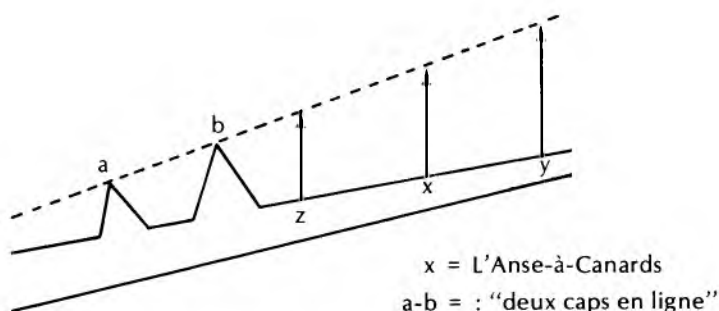


Fig 13

For this reason, the utility of the particular landmark correspondences used in this system depends entirely upon the location on the shore relative to which they were originally devised. That is to say, this particular cognitive set is community-specific and is of use only to the fishermen of L'Anse-à-Canards. This indicates that the particular functional significance of the environment to male residents of this community, and the cognitive map which they possess, are entirely different from those which would develop in a community located even a short distance to the north-east or south-west.

It is important to stress that the landmarks themselves are significant only as they relate to the ecology of the marine environment. The mere perception of the surface characteristics of the two capes does not in itself lead to the cognition of the mental map herein described. Rather, the fishermen who initially distinguished certain points and lines by means of the triangulation method discussed above did so only insofar as the fishing grounds had been discovered by trial and error. Once discovered, a method was needed to locate these areas in an immediate environment devoid of permanent distinguishing features. It must be emphasized that, in a very real sense, it is not so much the landmark configurations *per se* that are being named, but rather the points on the water from which these landmarks are viewed. It is this association which separates the process of merely perceiving the environment from the more significant cognitive structuring of that environment. As one fisherman in L'Anse-à-Canards expressed it, "It (i.e. the marks) doesn't mean something for nothing." In fact, the particular features seen from the water are not "real"; they do not exist except as perceived from

certain points on the water. It is for this reason that one may speak of the cultural creation of an environmental reality. In the case of the one-line-position method, two landmarks situated at some real distance from each other become cognized as being a fixed unit, and it is only as units that the marks possess any real meaning for the fishermen. It is, therefore, culture's interplay with environment which creates the fishermen's cognitive map of reality.

This technique of location-finding is not uncommon in cultures whose members rely upon their immediate geographical environment for survival. Indeed, were the practice described above unique to L'Anse-à-Canards, one could not draw general conclusions about the role of cognitive mapping in human activity. However, Tadatoka Igarashi describes an almost identical technique employed by the fishermen of the Japanese Tokara Islands.⁷ Paul Jorion notes its presence among the fishermen of Brittany, France,⁸ and James Faris mentions it in his study of an English-Newfoundland fishing community.⁹ Other instances have been noted in Brazil,¹⁰ Micronesia,¹¹ and Northern Alaska.¹² Such widespread distribution tends to suggest that the practice of cognitive mapping is a universal; indeed, scholars engaged in the study of this phenomenon argue that it is a basic psychological characteristic shared by individuals in all cultures and in all environments.

III

The designation of names to distinguish one place from another seems so ordinary and natural a practice that it would be easy to overlook in an analysis of this kind. The fact remains, however, that the names associating certain landmarks with points on the open water are universally adhered to and recognized, with several minor variations, by all fishermen in the community of L'Anse-à-Canards. This in itself is significant. Obviously, the names are of no consequence

7. *Ibid.*

8. Paul JORION, "Marks and Rabbit Fur: Location and Sharing of Grounds in Coastal Fishing," *Peasant Studies* 7, 2 (1978), 86-100.

9. James FARIS, *Cat Harbour: A Newfoundland Fishing Settlement*. Toronto, University of Toronto Press, 1972.

10. Shepard FORMAN, *The Raft Fishermen: Tradition and Change in the Brazilian Peasant Economy*. Bloomington, Indiana University Press, 1970.

11. Thomas GLADWIN, *East is a Big Bird: Navigation and Logic on Pulwat Atoll*. Cambridge, Harvard University Press, 1970.

12. Richard K. NELSON, *Hunters of the Northern Ice*. Chicago, University of Chicago Press, 1969.

to the fishermen's being able to use the landmarks for navigational purposes. What naming does, however, is categorize the physical environment in a standardly accepted form. In this way, the seemingly amorphous ocean is impressed with an invariable order and structure which collective acceptance renders culturally real. Group consensus in this way validates the experiential world view of the individuals comprising the group and reinforces their beliefs concerning the way the world "is".

Naming also serves as a learning device by means of which new initiates into the fishing occupation can be enculturated with the cognitive world view of the L'Anse-à-Canards fishermen. As has been suggested, mutual comprehension is possible only if the members of the group share a similar interpretation of the environment. When young fishermen begin to learn their new skills, they are taught the landmark configurations which indicate the fishing grounds. The descriptive nomenclature is a convenient means of impressing the marks on the memories of these debutants, as well as ensuring the continuity of the group's interpretation of reality.

This discussion implies that verbal communication concerning the environment is deemed necessary among the fishermen or, at least, that such communication does take place. My own observations, made in 1980, 1981, and 1982 during the height of the fishing season, confirm this. When the men meet on shore, a considerable amount of time is spent in discussing one's relative success in that day's or week's endeavours. During such discussions, the success of those present, as well as that of fishermen absent from the immediate context, is one of the initial concerns of the participants.

There would appear to be much more involved here than a mere interest in the activities of one's fellows. In L'Anse-à-Canards, fishing is an unpredictable undertaking, and success depends largely upon a combination of skill and luck. However, a fisherman who depended entirely upon chance would not only eventually fail, but would also be in a constant state of uncertainty as to his ability to provide for his family and himself. Verbal communication serves to provide information concerning where other fishermen have and have not been successful. This, coupled with the individual's own recent experiences, provides reliable indicators as to where fish might be caught in the future. Not only does such information reduce the fisherman's anxiety, it also helps him to determine a precise course of action for the next fishing trip, thereby minimizing the role of luck and maximizing that of skill.

This is not to imply that the fishermen are completely open and frank with each other, nor that they naïvely accept as true all that

they hear. Personal experiences recounted by family members or close friends are usually accepted as reliable, motivated most probably by a sincere desire to co-operate with those close to the individual. If, however, a fisherman hears either first- or second-hand that a certain individual claims to have had an exceptional catch at a certain place, he may believe it if his own experiences or those of his close acquaintances tend to verify the information. Otherwise, he may reject the information as an attempt to hide the informant's true source. This practice is not viewed as malicious or selfish, but is understood as part of the necessary competition in providing for one's own. The factor deciding the trustworthiness of information is thus directly dependant upon the definition of those who are to be considered "one's own". Of course, the information itself is valuable only if the definition of the physical environment and the system of location names is commonly recognized by all participants in the communicative events; that is, if both "signified" and "signifier" are universally recognized.

The example of the navigational system used by the fishermen of L'Anse-à-Canards illustrates well how cognition and communication may vary intraculturally. Since both cognition and communication are the result of direct personal experience with the environmental factors involved, it follows that the female population of L'Anse-à-Canards does not share the cognitive map of the men, nor the corresponding ability to communicate this specialized knowledge on the same level as do the men. Women may know the names, that the names refer to certain fishing grounds, and that certain grounds are farther from shore than others. However, such knowledge is passive in that it is gleaned purely at second-hand from what the men say. What the name (or signifier) signifies to the women is thus very different from that which it signifies for the men as, in each case, the information is understood and interpreted within very different referential frameworks. Sex, then, is a social variable in as much as cultural norms dictate different roles for each sex and, consequently, different experiential activities.

Naming, then, is important to the standardization of a group-shared cognitive structure. It permits the constant re-definition and verification of the individual's and the group's beliefs concerning the nature of their environment and, as a communicative device, permits the transmission of essential cultural information across the generations. Finally, naming allows the fisherman to share the experiences of his fellows and to accumulate a body of information larger than he alone would possess, thereby reducing his dependancy, both real and imagined, on good fortune for his success.

IV

The view of cognitive mapping presented in this analysis has been admittedly a somewhat narrow one. Attention has focused on the practical applications of the mental map of L'Anse-à-Canards fishermen and on its role in culture- and occupation-specific communication. This view has been determined by both the nature of the data and the questions being addressed. In the narrower sense, each individual is considered by cognitive anthropologists to possess his own unique mental map. To discuss most fully the role of cognition in the cultural interpretation of environmental reality, one would require precise mental maps from all individuals associated with the group in question. In this study, an examination of individual maps is not essential, as tradition and communication have already established common factors as our points of departure. The results of the cognitive mapping of the earliest fishermen in L'Anse-à-Canards have been adopted uniformly by their successors. One might even suggest that the reality of these latter has been dictated at least in part by the reality of their forebears.

The concern here has been to examine the maintenance of an already-established, synthesized cognitive map, the necessities which have influenced this maintenance, and the process of transmission, communication, and standardization which facilitates such maintenance. This discussion of the cognitive map of the L'Anse-à-Canards fishermen suggests implications for researchers engaged in studying the ethnography of speaking and the ethnography of talk. As was demonstrated, the full significance of the conversations concerning the success and failure of one's fellow fishermen lies in large part in the speakers' sharing of similar cognitive maps and place names. The researcher ignoring this factor risks only partial interpretation or, still worse, the misinterpretation of the subject of his analysis. A full understanding requires an awareness of not only the influence of elements in the immediate context of the communicative event, but also of the cultural context of which that particular event is but one manifestation.

*Memorial University of Newfoundland
St. John's, Newfoundland*

Résumé

De façon générale la cognition comprend le processus mental par lequel un individu applique des règles culturelles à l'interprétation de son monde. Pour une société de pêcheurs il est essentiel qu'on possède une connaissance détaillée de cette partie de l'environnement qui influence le plus la survie. La perception du groupe de sa topographie physique ne correspond pas nécessairement à celle de la science.

Cette étude a pour but d'identifier la carte cognitive des pêcheurs de L'Anse-à-Canards, à Terre-Neuve, d'en définir la forme et les fonctions, ainsi que d'examiner les questions de transmission, de communication et de standardisation de ces connaissances. On soulignera en même temps jusqu'à quel point il importe au chercheur d'être au courant de ces connaissances.