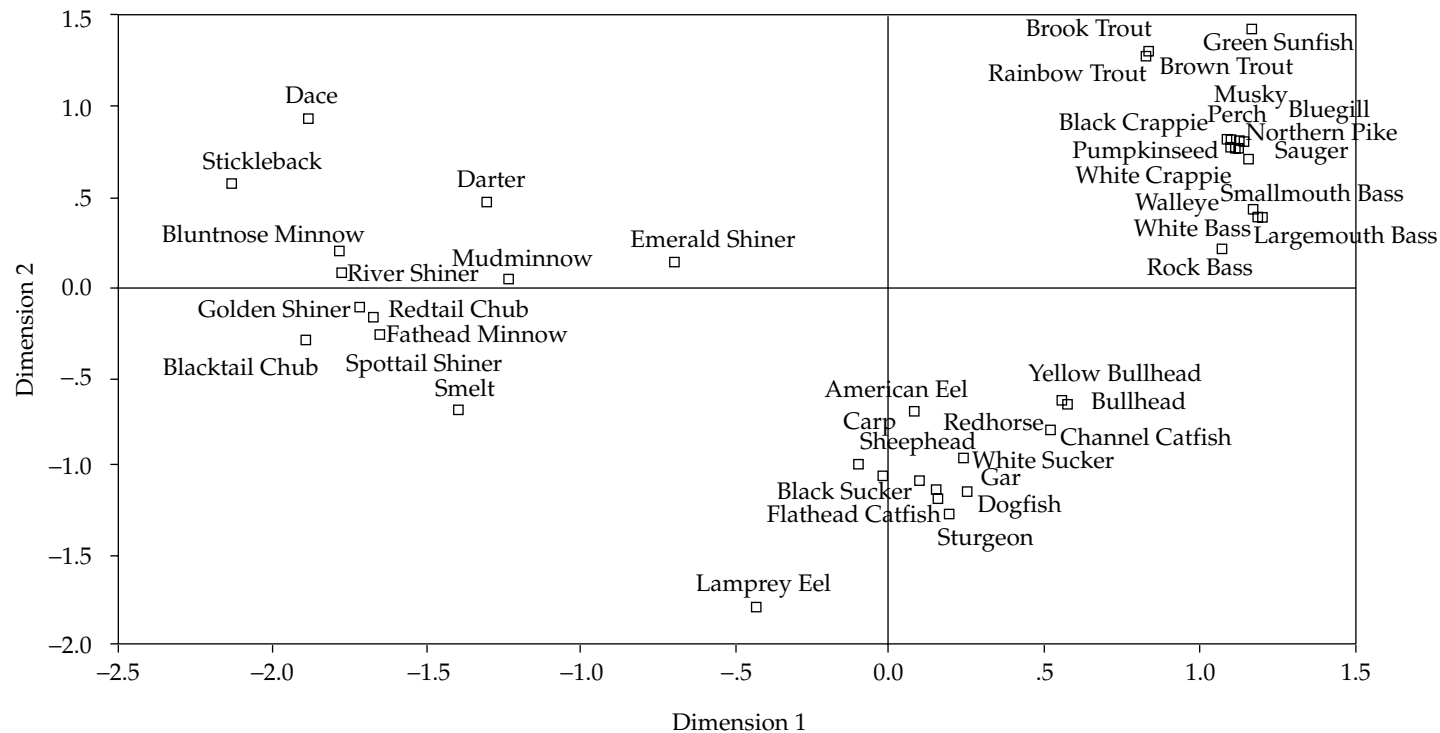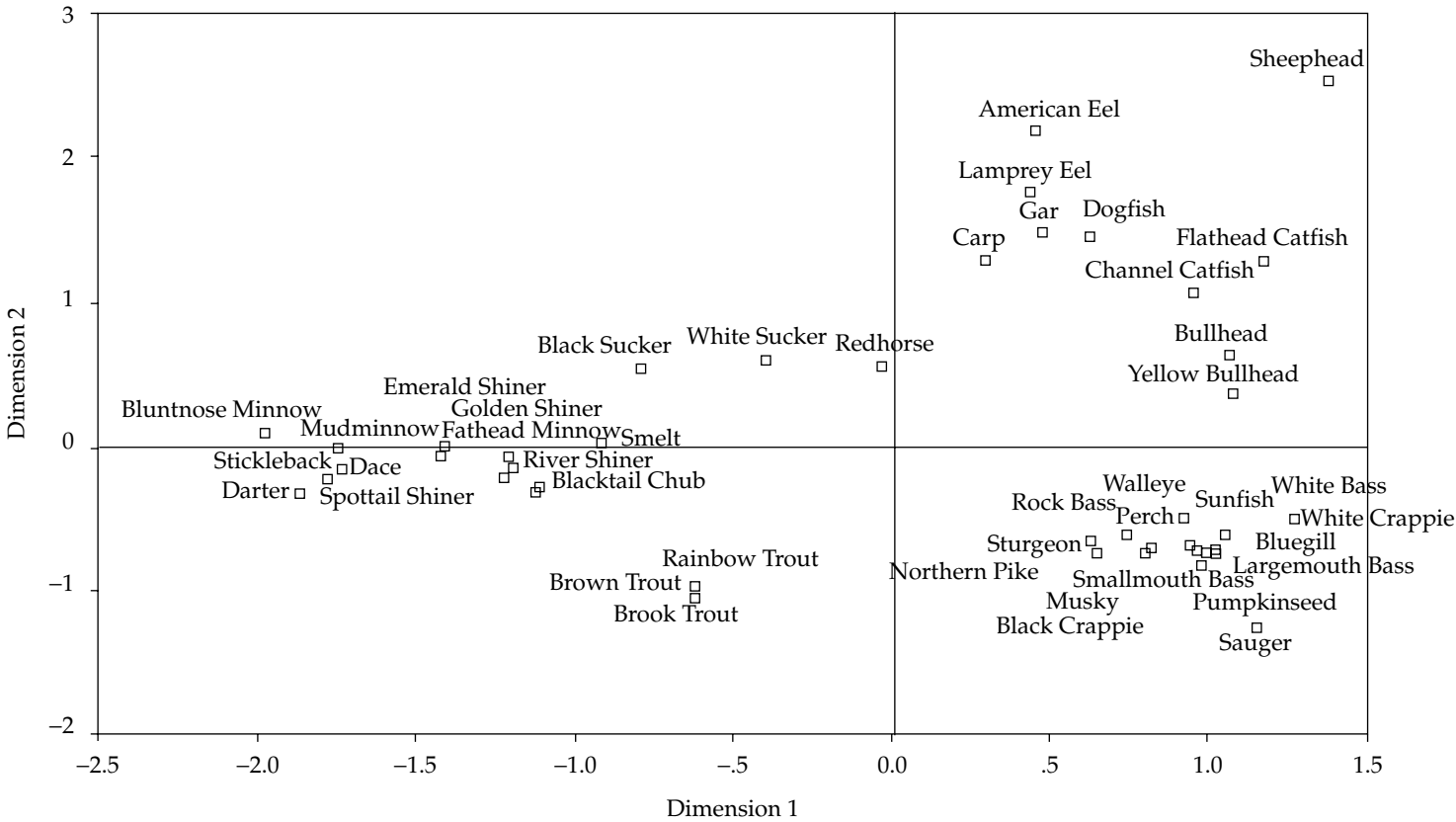Figure 7.1   Majority Culture Multidimensional Scaling; Euclidean Distance Model

Source: Medin et al. (2006).

Figure 7.2 Menominee Multidimensional Scaling; Euclidean Distance Model

Table 7.1 Fish Species used in the Different Studies

Common Name	Scientific Name	Study 1	Study 2	Study 3	Study 4
American eel (lawyer)	Anguilla rostrata	X		X	
Black (hog) sucker	Hypentelium nigricans	X	X	X	X
Black bullhead	Ameiurus melas	X		X	
Black crappie	Pomoxis nigromaculatus	X	X	X	X
Blacktail (hornyhead) chub	Nocomis biguttatus	X		X	
Bluegill	Lepomis macrochirus	X	X	X	
Bluntnose minnow	Pimephales notatus	X		X	
Brook trout	Salvelinus fontinalis	X	X	X	X
Brown trout	Salmo trutta	X	X	X	
Carp	Cyprinus carpio	X	X	X	X
Channel catfish	Ictalurus punctatus	X		X	
Dace	Phoxinus spp. or Rhinochthys spp.	X		X	
Darter	Etheostoma spp.	X		X	
Dogfish (bowfin)	Amia calva	X	X	X	X
Emerald shiner	Notropis atherinoides	X		X	
Fathead minnow	Pimephales promelas	X	X	X	
Flathead (Mississippi) catfish	Pylodictis olivaris	X			
Gar (billfish)	Lepisosteus spp.	X	X	X	
Golden shiner	Notemigonus crysoleucas	X	X	X	
Green sunfish	Lepomis cyanellus	X		X	
Lamprey eel	Ichthyomyzon spp.	X			
Largemouth bass	Micropterus notius	X	X	X	X
Mudminnow	Umbra limi	X		X	
Musky	Esox masquinongy	X		X	
Northern pike	Esox lucius	X	X	X	X
Pumpkinseed	Lepomis gibbosus	X		X	
Rainbow trout	Oncorhynchus mykiss	X		X	
Redhorse	Moxostoma spp.	X	X	X	X
Redtail chub	Nocomis effusus	X	X	X	

Table 7.1 Continued

Common Name	Scientific Name	Study 1	Study 2	Study 3	Study 4
River (blackback) shiner	Notropis blennius	X	X	X	
Rock bass	Ambloplites rupestris	X	X	X	X
Sauger	Stizostedion canadense	X			
Sheephead (drum)	Aplodinotus grunniens	X		X	
Smallmouth bass	Micropterus dolomieu	X	X	X	X
Smelt	Osmerus mordax	X			
Spottail shiner	Notropis hudsonius	X		X	
Stickleback	Culaea inconstans	X		X	
Sturgeon	Acipenser fulvescens	X	X	X	
Walleye	Stizostedion vitreum	X	X	X	X
White (brown) sucker	Catostomus insignis	X		X	
White bass	Morone chrysops	X		X	
White crappie	Pomoxis annularis	X		X	
Yellow bullhead	Ameiurus natalis	X	X	X	X
Yellow perch	Perca flavescens	X	X	X	X

Source: Medin et al. (2006).

Figure 8.1   Fish Habitat Relations, Multidimensional Scaling (Both Groups)
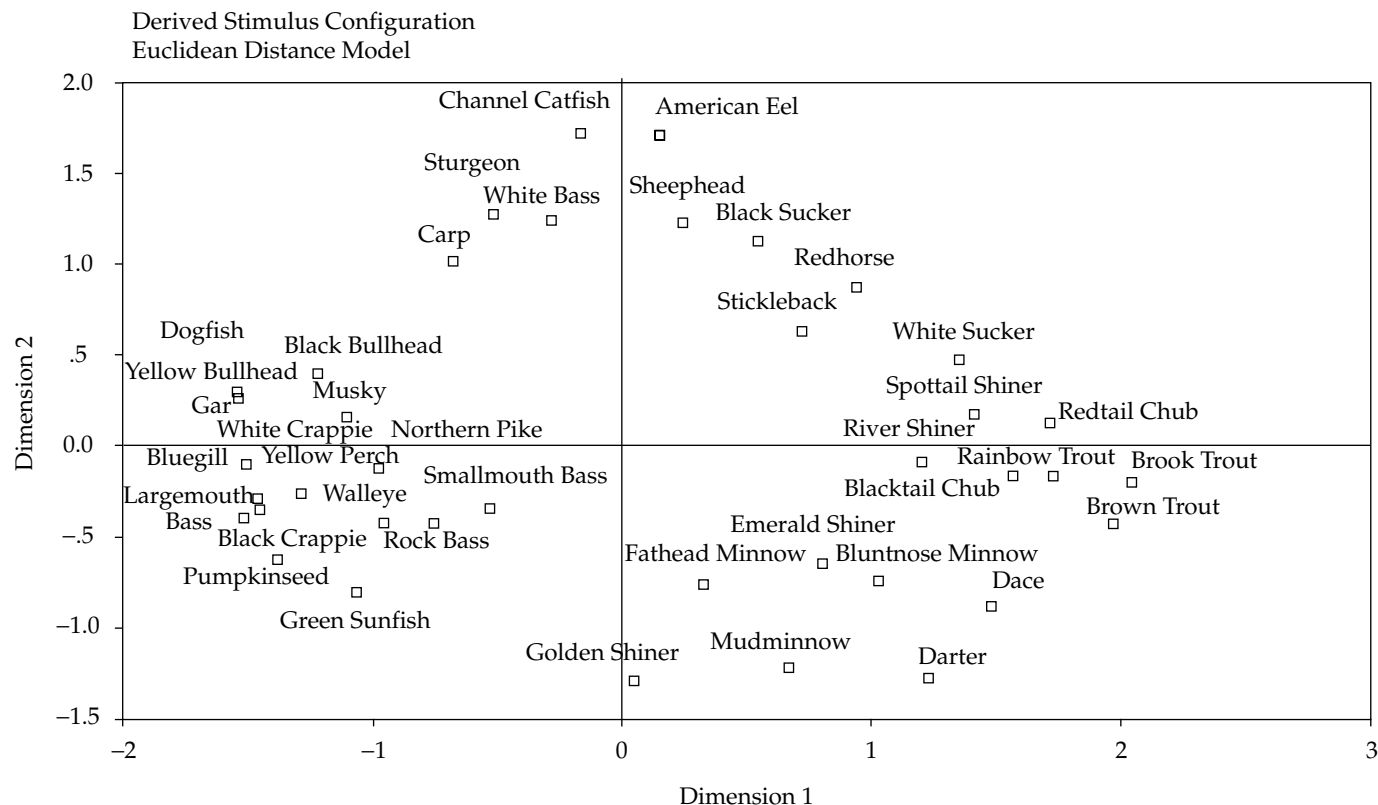

Source: Medin et al. (2006).

Table 8.1 Most Prominent Reciprocal Relations Elicited in Study 3 (Percentage of Members of Each Group Agreeing on a Reciprocal Relation Between a Pair of Species)

Majority	Menominee	Species A	Species B
0.13	0.67	Walleye	Smallmouth bass
.07	.60	Northern pike	Walleye
.07	.53	Yellow perch	Black crappie
.07	.50	Carp	Black (hog) sucker
.21	.50	Northern pike	Dogfish (bowfin)
.00	.47	Brown trout	Black (hog) sucker
.00	.47	Walleye	Black (hog) sucker
.33	.47	Brown trout	Brook trout
.20	.47	Walleye	Largemouth bass
.20	.47	Black crappie	Rock bass
.13	.47	Smallmouth bass	Rock bass
.20	.47	Largemouth bass	Smallmouth bass

Source: Medin et al. (2006).

Table 9.1 Average Species Rankings by Menominee and Majority-Culture Fish Experts (Lower Numbers Indicate Higher Value)

Species	Menominee	Majority Culture
Sturgeon	9.1	8.6
Black sucker	12.0	12.1
Yellow bullhead	11.1	10.0
Bluegill	5.4	4.8
Brook trout	2.2	6.8
Brown trout	2.6	7.9
Gar	14.5	13.7
Bluntnose minnow	13.0	12.0
Musky	8.7	5.4
Largemouth bass	4.4	6.4
Smallmouth bass	7.3	6.5
Northern pike	6.5	5.5
River shiner	11.9	11.0
Walleye	4.6	2.9
Perch	5.9	5.9

Source: Medin et al. (forthcoming).

Table 9.2 Rankings of Goals of Fishing Broken Down by Group
(Lower Numbers Indicate Higher Priority)

Goal	Majority Culture	Menominee
Being close to nature	2.4	3.0
For the challenge of finding fish	3.4	4.4
As a source of food	4.6	2.7
To catch a "trophy fish"	4.6	5.0
As a way to relax	2.6	2.4
As an activity to pass on to future generations	2.9	3.2

Source: Medin et al. (forthcoming).

Table 9.3 Ratings of Fishing Practices by Each Group
         (1 = Strong Disapproval; 7 = Strong Approval)

	Majority Culture	Menominee
1. Doing catch-and-release only	4.5	4.7
2. Spearfishing suckers or carp	5.9	5.1
3. Spearfishing walleyes or northern	1.0	4.0
4. Having a trophy fish mounted by a taxidermist	4.4	4.9
5. Fishing for bluegill or sunfish for food	6.0	6.9
6. Fishing for northern or musky for food	2.9	6.1
7. Fishing for largemouth or smallmouth bass for food	3.4	6.5
8. Using setpoles to catch trout	2.5	3.3
9. Selling a fish	2.0	1.3
10. Keeping undersized fish	1.6	2.3
11. Participating in fishing contests	4.9	4.3
12. Fishing on spawning beds	3.0	2.8
13. Pretending to fish for suckers hoping to get a sturgeon on the line	3.6	2.1
14. Culling out smaller fish to get the largest possible limit	2.9	1.9
15. Using fish finders	5.9	3.6
16. Taking more than one's limit in order to feed one's family	2.9	5.2
17. Giving away all of the fish one has caught	3.9	4.8

Source: Medin et al. (forthcoming).

Table 10.1   Predicted Fish-Value Rankings Own- and Other-Group

Raters	Menominee		Majority Culture	
Rated	Menominee	Majority Culture	Menominee	Majority Culture
Sturgeon	9.6	8.7	5.4	10.9
Black sucker	11.9	11.7	11.5	11.9
Bullhead	10.9	10.3	10.6	10.0
Bluegill	4.7	6.7	6.1	4.0
Brook trout	1.6	5.5	2.4	5.1
Brown trout	2.3	5.6	3.1	7.1
Gar	14.4	13.9	13.9	14.1
Bluntnose minnow	13.4	13.4	12.2	13.2
Largemouth bass	4.2	2.8	6.8	4.3
Smallmouth bass	7.5	7.3	7.5	7.2
Northern	6.0	5.5	6.2	5.4
River shiner	12.4	12.9	12.6	12.5
Walleye	4.3	1.4	4.8	2.1
Perch	7.5	7.8	6.2	6.2
Musky	8.6	4.6	7.9	5.9

Source: Medin et al. (forthcoming).

Table 10.2   Own- and Other-Group Predicted Goal Rankings[d]

	Majority Culture			Menominee		
	Self[a]	Group[b]	Other Group[c]	Self[a]	Group[b]	Other Group[c]
Being close to nature	2.4	3.2	4.6	3.0	3.0	3.2
For the challenge of finding fish	3.4	3.7	3.3	4.4	4.6	3.7
As a source of food	4.6	3.9	3.7	2.7	1.7	2.5
To catch a "trophy fish"	4.6	3.9	1.9	5.0	5.4	4.5
As a way to relax	2.6	2.4	2.6	2.4	3.1	3.5
As an activity to pass on to future generations	2.9	2.9	4.2	3.2	3.3	3.5

Source: Medin et al. (forthcoming).
[a]The average of the individual ratings broken down by group.
[b]Predictions for one's own group.
[c]Predictions by the other group in study 2.
[d]Lower numbers indicate higher importance.

Table 10.3   Reported and Predicted Ratings of Fishing Practices[d]

	Majority Culture			Menominee		
	Self[a]	Group[b]	Other Group[c]	Self[a]	Group[b]	Other Group[c]
Doing catch-and-release only	4.5	3.1	4.3	4.7	3.3	3.1
Spearfishing suckers or carp	5.9	5.9	3.4	5.1	5.0	6.2
Spearfishing walleyes or northerns	1.0	1.1	1.2	4.0	5.4	5.9
Having a trophy fish mounted	4.4	4.8	6.7	4.9	3.9	4.6
Fishing for bluegill or sunfish for food	6.0	6.4	6.2	6.9	7.0	6.5
Fishing for northerns or muskies for food	2.9	3.2	5.6	6.1	6.8	5.7
Fishing for largemouth or smallmouth bass for food	3.4	3.8	5.5	6.5	6.8	5.7
Using setpoles to catch trout	2.5	2.6	1.1	3.3	3.3	6.1
Selling fish	2.0	1.7	1.7	1.3	1.5	4.4
Keeping undersized fish	1.6	2.6	2.2	2.3	2.4	4.8
Participating in fishing contests	4.9	4.9	6.7	4.3	5.0	4.4
Fishing spawning beds	3.0	4.2	4.0	2.8	4.3	5.9
Pretending to fish for suckers to get a sturgeon	3.6	3.8	3.0	2.1	2.9	5.7
Culling for biggest limit	2.9	3.2	3.4	1.9	3.5	4.9
Using fish finders	5.9	5.9	6.5	3.6	4.8	6.1
Exceeding limit to feed family	2.9	4.1	2.8	5.2	5.3	6.0
Giving all fish away	3.9	3.3	3.2	4.8	5.1	4.8

Source: Medin et al. (forthcoming).
[a]The average individual rating in the earlier study.
[b]Own-group predictions for rating of fishing practices.
[c]Other-group predictions for rating of fishing practices.
[d]Higher numbers indicate greater approval; 4 = neutral.

Table 13.1   The List of Plants and Animals Used for the Forest
             Ecology Studies

Common Name	Scientific Name
Animals	
Bear (black)	Ursus americanus
Beaver	Castor canadensis
Blue jay	Cyanocitta cristata
Bobcat	Lynx rufus
Chipmunk	Tamias striatus
Coyote	Canis latrans
Deer	Ococoileus virginianus
Eagle (bald)	Haliaeetus leucocephalus
Finch (house)	Carpodacus purpureus
Fox (red)	Vulpes fulva
Grouse (ruffed)	Bonasa umbellus
Hawk (red-tailed)	Buteo jamaicensis
Junco (dark-eyed)	Junco hyemalis
Moose	Alces alces
Otter	Lutra canadensis
Owl (great horned)	Bubo virginianus
Partridge (gray)	Perdix perdix
Porcupine	Erethizon dorsatum
Possum (Virginia)	Didelphis marsupialis
Rabbit	Sylvilagus spp.
Raccoon	Procyon lotor
Robin (American)	Turdus migratorius
Skunk (striped)	Mephitis mephitis
Squirrel (red; pine; chikaree)	Sciurus carolinensis
Turkey	Meleagris gallopavo
Turtle (painted)	Chrysemys picta
Wolf (gray, timber)	Canis lupus
Wood duck	Aix sponsa
Woodpecker (downy)	Picoides spp.
Plants	
Alder (red)	Alnus rubra
Basswood	Tilia americana
Bitterroot	Lewisia rediviva
Black spruce	Picea mariana
Blackberry	Rubus spp.
Bloodroot	Sanguinaria canadensis
Blueberry	Vaccinium spp.
Butternut	Juglans cineraria
Cattail	Typha spp.

Table 13.1 Continued

Common Name	Scientific Name
Cedar (yellow)	Thuja spp.
Cherry tree	Prunus serotina
Chokecherry	Prunus virginiana
Cowslip	Caltha palustris
Cranberry	Vaccinium macrocarpum
Dogwood	Cornus spp.
Elderberry	Sambucus canadensis
Elm (American)	Ulmus americana
Fern	Filicineae family
Ginseng	Panax quincefolium
Gooseberry (American)	Ribes spp.
Hemlock (western)	Tsuga heterophylla
Hickory shagbark, true	Carya ovata
Prickly ash	Xanthoxylum americanum
Red maple	Acer rubrum
Red oak	Quercus rubra
Silver maple	Acer saccharinum
Silver poplar	Populus alba
Skunk cabbage	Symplocarpus foetidus
Solomon's seal	Polygonatum biflorum
Sumac (staghorn)	Rhus typhina
Thornapple	Datura stramonium
Trillium	Trillium spp.
White ash	Fraxinus americana
White birch	Betula papyrifera
White oak	Quercus alba
White Pine (whitebark)	Pinus strobus
Wild columbine	Aquilegia canadensis
Wild ginger	Asarum canadense
Witch hazel (American)	Hamamelis virginiana

Source: Authors' compilation.

Table 13.2   Ratings of the Importance of Plants to the Forest

	Menominee	Majority Culture
White oak	6.5	6.1
Cedar	6.3	5.5
White pine	6.3	4.6
Fern	5.3	4.4
Hemlock	5.8	4.2
Cherry tree	5.7	4.3
Witch hazel[a]	4.7	4.0
Ginseng	5.8	3.3
Thornapple	5.4	4.6
Chokecherry	6.0	4.7
Elm	5.6	3.3
White birch	5.7	3.8
Popple or Poplar	5.6	4.8
Gooseberry[a]	4.1	3.9
Blackberry	6.3	5.0
Bitterroot[a]	5.8	1.0
Skunk cabbage[a]	4.8	2.4
Solomon's seal[a]	4.7	1.5
Blueberry	5.3	4.7
Cranberry	5.6	4.3
Alder	4.8	4.3
Hickory	5.6	4.2
Butternut	5.7	4.5
Sumac	4.5	2.8
Wild ginger[a]	5.5	1.7
White ash	6.0	3.9
Black spruce[a]	5.1	4.3
Dogwood[a]	5.0	2.6
Red maple	5.6	4.2
Elderberry[a]	5.6	3.9
Basswood	5.6	3.6
Cowslip	4.4	2.5
Bloodroot[a]	5.4	2.0
Trillium	4.9	4.1
Prickly ash[a]	4.9	3.6
Wild columbine[a]	3.0	2.8
Cattail	5.6	4.4
Silver maple	5.3	4.1
Red oak	6.1	6.0

Source: Authors' compilation.
[a]Fewer than 75 percent of hunters knew these plants.

Table 13.3 Ratings of the Importance of Plants to Self

	Menominee	Majority Culture
White oak	6.0	6.0
Cedar	6.2	4.9
White pine	6.6	5.1
Fern	4.6	3.6
Hemlock	5.4	3.9
Cherry tree	5.5	4.3
Witch hazel[a]	4.8	3.8
Ginseng	5.8	4.4
Thornapple	4.4	2.9
Chokecherry	5.0	3.2
Elm	5.4	3.1
White birch	5.8	4.2
Popple or Poplar	5.5	4.4
Gooseberry[a]	4.0	2.9
Blackberry	6.4	5.2
Bitterroot[a]	6.1	2.7
Skunk cabbage[a]	3.7	2.7
Solomon's seal[a]	4.7	1.5
Blueberry	5.4	4.7
Cranberry	5.3	5.3
Alder	4.0	2.6
Hickory	5.6	4.7
Butternut	5.6	4.6
Sumac	4.3	2.1
Wild ginger[a]	4.6	2.2
White ash	5.6	4.4
Black spruce[a]	4.6	3.6
Dogwood[a]	2.9	2.1
Red maple	6.0	4.6
Elderberry[a]	3.9	3.8
Basswood	4.9	3.3
Cowslip	3.7	2.8
Bloodroot[a]	4.8	2.0
Trillium	4.5	4.0
Prickly ash[a]	4.1	2.0
Wild columbine[a]	2.7	2.5
Cattail	3.7	3.4
Silver maple	4.6	4.2
Red oak	5.7	5.5

Source: Authors' compilation.
[a]Fewer than 75 percent of hunters knew these plants.

Table 13.4	Ratings of the Importance of Animals to the Self	
	Menominee	Majority Culture
Coyote	4.8	3.2
Fox	4.5	3.5
Deer	6.6	6.6
Bobcat	4.9	3.5
Wolf	5.0	3.3
Bear	6.3	5.1
Raccoon	3.9	2.4
Opossum	2.6	1.3
Mouse	3.0	1.8
Partridge	5.6	5.5
Rabbit	4.9	4.3
Squirrel	4.3	3.8
Grouse	5.6	5.3
Beaver	4.9	2.9
Eagle	6.4	5.7
Hawk	5.3	4.3
Turkey	5.0	5.8
Chipmunk	3.6	2.9
Otter	5.1	3.7
Porcupine	4.0	1.8
Woodpecker	4.6	3.4
Owl	4.6	3.9
Turtle	4.9	2.6
Bluejay	4.2	3.2
Robin	4.1	4.6
Skunk	2.8	1.8
Wood duck	4.6	5.3
Finch	4.4	3.8
Junco	4.7	3.1

Source: Authors' compilation.

Table 13.5   Ratings of the Importance of Animals to the Forest

	Menominee	Majority Culture
Coyote	5.6	4.3
Fox	5.1	4.4
Deer	6.1	4.8
Bobcat	5.7	3.8
Wolf	5.6	4.2
Bear	5.8	4.6
Raccoon	4.8	3.3
Opossum	3.1	1.8
Mouse	4.6	3.5
Partridge	5.5	4.6
Rabbit	5.5	4.1
Squirrel	5.4	4.6
Grouse	5.5	4.6
Beaver	4.7	3.7
Eagle	6.1	5.0
Hawk	5.6	4.6
Turkey	4.4	4.2
Chipmunk	4.2	3.4
Otter	5.2	3.1
Porcupine	4.1	2.2
Woodpecker	5.4	4.0
Owl	5.1	4.6
Turtle	4.4	2.8
Bluejay	4.5	2.7
Robin	4.6	3.2
Skunk	3.8	2.6
Wood duck	4.5	4.0
Finch	4.4	3.5
Junco[a]	5.25	2.9

Source: Authors' compilation.

[a]Fewer than 75 percent of hunters recognized these animals.

Table 14.1   Average of Individual Goal Rankings of Menominee (M) and Majority-Culture (MC) Hunters (Lower Numbers Indicate Greater Importance)

	M	MC
Close to nature	4.3	3.0
Outsmart game	4.1	4.0
Source of food	3.4	5.6
Trophy	4.9	4.8
Get away from it all	4.8	3.1
Pass on to future	4.1	3.2
Doing as ancestors did	4.4	4.3

Source: Authors' compilation.

Table 14.2 Mean Approval Ratings of Menominee and Majority-Culture Hunters for the Hunting Practices (Larger Numbers Indicate Greater Approval)

	Menominee	Majority Culture
Biggest buck	3.3	4.2
"Shining" deer	2.3	1.2
Bow for deer	6.5	6.7
Bait deer for gun	3.7	3.6
Bait deer for bow	4.7	4.0
Deer for food	6.7	5.9
Bear for food	5.2	4.6
Bait bear	4.0	5.9
Dogs for bear	4.5	4.0
Dogs for deer	5.4	1.7
Shoot wolves	1.8	3.6
Turkey for food	6.4	5.8
Raccoons or squirrels for fun	1.5	3.4
Exceed limit for family	3.8	4.5
Give away game	4.3	4.1
Selling deer	1.4	1.9
Borrow tag	2.7	3.6
Leave beaver meat	4.3	4.4
Leave downed doe	1.1	1.1
Leave bear meat	1.1	1.3
Tenderloin only	1.0	1.0

Source: Authors' compilation.

Table 14.3 Goal Rankings Predicted by the Two Samples of Hunters for One's Own Community (Lower Numbers Correspond to Greater Importance)

	M-M[a]	Mi[e]	MC-M[b]	MC-MC[c]	MCi[e]	M-MC[d]
Close to nature	3.7	2.3	3.7	3.2	3.0	4.7
Outsmart game	4.3	4.1	4.1	3.8	4.0	4.1
Source of food	1.9	3.4	3.3	4.8	5.6	3.7
Trophy	5.1	4.9	4.0	4.7	4.8	3.1
Get away from it all	5.3	4.8	4.3	2.6	3.1	3.1
Pass on to future	3.6	4.1	3.9	3.2	3.2	5.0
Doing as ancestors did	4.1	4.4	3.6	4.6	4.3	5.3

Source: Authors' compilation.

[a] Menominee hunters' predictions of own-group responses.

[b] Majority-culture hunters' predictions of Menominee responses.

[c] Majority-culture hunters' predictions of own-group responses.

[d] Menominee hunters' predictions of majority-hunters' responses.

[e] Mi and MCi = mean individual rankings from table 14.2.

Table 14.4 Approval Ratings Predicted by the Menominee (M) and Majority-Culture (MC) Hunters for Twenty-One Hunting Practices (Larger Numbers Indicate Greater Approval)

Hunting Practice	M-M[a]	Mi[e]	MC-M[b]	MC-MC[c]	MCi[e]	M-MC[d]
Biggest buck	3.2	3.3	4.7	4.6	4.2	5.9
Shining deer	2.7	2.3	5.6	1.1	1.2	1.7
Bow for deer	6.3	6.5	4.5	6.3	6.7	6.7
Bait deer for gun	4.2	3.7	5.2	3.8	3.6	5.5
Bait deer for bow	4.7	4.7	5.4	4.7	4.0	5.8
Deer for food	6.9	6.7	6.3	5.9	5.9	5.1
Bear for food	5.3	5.2	5.6	4.1	4.6	4.0
Bait bear	4.3	4.0	6.1	6.5	5.9	4.8
Dogs for bear	3.8	4.5	6.6	4.4	4.0	4.7
Dogs for deer	4.9	5.4	6.4	1.5	1.7	1.7
Shoot wolves	1.5	1.8	4.6	3.4	3.6	2.5
Turkey for food	6.3	6.4	5.5	6.0	5.8	6.0
Raccoons or squirrels for fun	2.3	1.5	4.4	3.2	3.4	4.1
Exceed limit for family	4.2	3.8	6.3	3.6	4.5	3.7
Give away game	4.1	4.3	4.2	3.8	4.1	3.5
Selling deer	1.8	1.4	4.6	1.4	1.9	2.3
Borrow tag	4.0	2.7	5.6	4.1	3.6	4.9
Leave beaver meat	2.9	4.3	4.4	4.6	4.4	5.0
Leave downed doe	1.1	1.1	3.4	1.1	1.1	3.1
Leave bear meat	1.0	1.1	2.7	1.4	1.3	2.9
Tenderloin only	1.1	1.0	2.5	1.1	1.0	2.7

Source: Authors' compilation.

[a]Menominee hunters' predictions of own-group responses.

[b]Majority-culture hunters' predictions of Menominee responses.

[c]Majority-culture hunters' predictions of own-group responses.

[d]Menominee hunters' predictions of majority-culture hunters' responses.

[e]Mi and MCi = mean individual ratings from table 14.2.