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Evaluating the Cultural Fit of Hunting and Angling Among Minority Sportspersons in North Carolina

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ABSTRACT

Culture defines leisure-specific behaviors, relationships, institutions, identities, and understandings of reality, but culture's role in U.S. hunting and fishing is poorly understood among diverse groups. We measure the cultural fit of hunting and angling and examine statistical differences among five culturally diverse groups of North Carolina hunters and anglers (n = 1,048). Cultural fit scores for hunters were highest among White and Native American respondents. These hunters had long family traditions and role models. Fishing was a better fit than hunting among Hispanics and African Americans. Asians' scores were low for both activities. Our findings suggest a need to engage the fastest growing ethnic groups in the United States (Asians and Hispanics) and to do so on their own terms, with forms of hunting and fishing tailored to unique subcultures. Specifically, sportsperson recruitment efforts with minority groups may benefit from less focus on heritage and more on building a community.

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Introduction

Responding to the needs of changing sportsperson demographics across the United States will require a deeper understanding of how hunting and fishing fit within the cultures of ethnic and racial minority groups. U.S. Census data from 2016 revealed that Asians are the fastest growing minority group since 2000 (an expected increase [EI] of 143.1% by 2060), followed by Hispanic/Latino (EI of 114.8% by 2060), Native Hawaiian or Pacific Islanders (EI of 62.6% by 2060), Native Americans (EI of 41.7% by 2060), African Americans (EI of 42.0% by 2060), and Whites (an expected decrease of 8.2% by 2060) (Colby & Ortman, 2015). Related increases among nontraditional hunting and fishing constituencies will influence hunting and fishing participation rates, attitudes, expenditures, ecological impacts, and policy (Marsinko & Dwyer, 2002; Oh & Ditton, 2008). Several studies have focused on identifying cultural differences in attitudes (Duda, Bissell, & Young, 1995; Hunt, Floyd, & Ditton, 2007), perceived benefits (Hunt & Ditton, 2001), participation (Marsinko & Dwyer, 2002; Schroeder, Nemeth, Sigurdson, & Walsh, 2008), and effort (Miller & Vaske, 2003) among hunters and anglers. This research suggests that minority leisure patterns may both match with and diverge from

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Whites. Despite such fertile research attending to growing minority populations, many questions persist about the drivers of cultural difference. It is important for research to move beyond identifying cultural differences between Whites and minority groups and toward studies exploring mechanisms for such differences and ways to measure them (Floyd, 1998).

The ethnicity hypothesis provides one way to explain cultural differences in leisure (Krymkowski, Manning, & Valliere, 2014; Thomas & Adams, 1985; Washburne, 1978; Washburne & Wall, 1980). The ethnicity hypothesis suggests participation rates and variation in leisure behavior are functions of unique cultural processes, such as norms, social organization, and value systems, rather than poverty or socio-economic marginalization (Floyd, Shinew, McGuire, & Noe, 1994). Rural two-parent families historically grounded White hunting socialization mechanisms. However, these mechanisms have been eroding for Whites with the reshaping of U.S. family structures due to several factors, including increased urban living, changing economies, and declines in marriage rates (Larson, Stedman, Decker, Siemer, & Baumer, 2014). For minority groups in the United States, family life is historically structured differently than Whites, embedding outdoor recreation preferences and behaviors within subcultures in ways and for reasons that differ from Whites (e.g., O'Brien & Njambi, 2012). Nonetheless, assimilation into the dominant White sportsperson culture is tacitly considered the solution for boosting minority interest and participation rates (e.g., Minnesota Department of Natural Resources, 2013). This dominant culture is articulated and perpetuated through The North American Model of Wildlife Conservation, a narrative of global north conservation hegemony, rendering white male hunters and anglers as the primary actors of wildlife conservation in the United States and Canada (Peterson & Nelson, 2017). This legacy suggests the cultural hypotheses would predict lower cultural fit for hunting and fishing among non-White participants.

The cultural fit hypothesis posits that individual differences about a domain (in this case, the practice of hunting or fishing) are a function of the degree of congruency between an individual's cultural values, beliefs, and expectations and the expected effect, behavior, and cognition about that domain (Friedman et al., 2010; Lu, 2006; Peltokorpi & Froese, 2014; Ward, Leong, & Low, 2004). This theory maintains the better aligned something is with the sociocultural context, the more valuable or beneficial it is to the cultural group in question (Cheung & Yeung, 2011). This perspective has roots in functional psychology and prioritizes individual values, norms, and connections to social groups and how those connections impact degree of acculturation or cultural fit. Not only can research using cultural fit theory focus on existing and measurable social categories (e.g., race, ethnicity, sex, age; Gloria, Castellanos, & Orozco, 2005), but it also accounts for connections between moderating conditions, such as cultural institutions and processes, time, or space, that produce gradations of cultural fit (e.g., religion, Cheung & Yeung, 2011; normative racial and ethnic prejudice, Brittian, Toomey, Gonzales, & Dumka, 2013).

For several reasons, cultural fit provides a good framework for evaluating the extensive interest and participation disparity between White and minority hunters and exploring why less disparity is present among anglers (USFWS, 2011). First, and perhaps most pragmatically, investigations of minority acculturation in other outdoor activities suggest fit is important (Finn & Loomis, 1998; Krymkowski et al., 2014), and good fit has been linked to enhanced well-being among participants (Schiefer, Möllering, & Daniel, 2012). Second, Whites and Native Americans have well-articulated hunting histories while other racial and ethnic groups largely lack this history (Burger, 1999; Larson et al., 2014; USFWS, 2011; White et al., 2014). Fishing appeals to a broader spectrum of racial and ethnic groups, and increased attention has been paid to the growing Hispanic community (Recreation Boating & Fishing

Foundation, 2016; USFWS, 2011). Third, using cultural fit theory allows us to situate this work within a large body of literature on hunting and fishing where culture is conceptualized as a set of shared beliefs and values reflecting individual minority values, norms, and history (e.g., Allen et al., 2009).

Despite rising interest in hunting and fishing among minorities, empirical studies investigating the role of cultural fit remain infrequent. Further, outside of cross-cultural studies in business management, education, and collectivism-individualism comparisons, few studies operationalize cultural fit. North Carolina is a good place to study cultural fit within the context of hunting and fishing for at least two reasons. First, the state is one of the ten fastest growing in the United States, experiencing urbanization, development, and cultural diversification (U.S. Census Bureau, 2011). Second, between 2000 and 2010, the state's estimated total hunter population increased 14% to 335,000, while the total angler population increased 18% to 1.5 million. In that span, the minority hunter and angler population increased 180% and 78%, respectively (USFWS, 2011, 2001). We expected White and Native American hunters to have higher cultural fit than other minority groups in North Carolina and less racial or ethnic disparity in cultural fit for fishing.

Methods

Theory supporting instrument design

We applied cultural fit in a relatively novel although not new (see Lu, 2006) way by focusing on cultural fit within a group of practice (hunting and fishing) rather than a group defined by an organizational structure. Research suggesting that cultural fit is partly a function of social history and networks fueled our interest in moving cultural fit theory into a new direction (Gloria, Kurpius, Hamilton, & Willson, 1999; Kaplan, 2001; Krymkowski et al., 2014; Lewis, 2007).

The existence of tradition and heritage is an influential driver of hunting and angling participation rates. They are especially important to White Americans confronting cultural dissonance associated with declining lifeways and social ethics linked to these activities (Bronner, 2008; Morgan, 2008; Riemer, 2004; Tonn, Endress, & Diamond, 1993). They are also important to those who believe that humans are hunters by nature (Ardrey, 1976), and important cultural traditions associated with this belief system extol passing hunting on to new generations (Chitwood, Peterson, & Deperno, 2011; Mahoney, 1996). The historical record is clear on the cultural importance of hunting and fishing to Native Americans, and their participation rates rival and sometimes surpass those of Whites (Burger, 1999; White et al., 2014). Unlike Whites or Native Americans, we know much less about how these activities fit among Hispanic, African American, and Asian groups. Holland (2002), Proctor (2002), Wightman et al. (2008), and others suggest historico-cultural and structural contours may be most instrumental to tradition and heritage development among groups with low participation rates or interest. The relationship between black slaves and hunting, for example, suggests that communal or symbolic aspects may be key points to consider when studying hunting tradition and heritage among African Americans in the United States (Giltner, 2010; Starkey, 2005; Wiggins, 1977). Item 1 in the cultural fit scale attempts to capture this heritage-based element of cultural fit (Table 1).

Hunting and fishing are social activities, and guardians (e.g., parents, grandparents) are instrumental in initiating children into these activities (Leonard & Aiken, 2015). Mentors, companions, and community members can enable and constrain hunting and fishing

Table 1. Reliability analysis of hunter and angler cultural fit scales.

	Construct Total Correlation	Alpha if deleted	Cronbach's alpha
Hunters (n = 567)			.807
1. There is a long tradition of hunting in my family	.674	.750	
2. I had a hunting role model when I was a youth	.559	.778	
3. I typically hunt with immediate family	.490	.794	
4. Hunting is important to my immediate family	.647	.758	
5. Hunting is important to my community	.482	.794	
6. Hunting is important to my friends	.550	.781	
Anglers (n = 362)			.788
1. There is a long tradition of fishing in my family	.545	.752	
2. I had a fishing role model when I was a youth	.516	.761	
3. I typically fish with family	.392	.780	
4. Fishing is important to my immediate family	.622	.742	
5. Fishing is important to my community	.461	.770	
6. Fishing is important to my friends	.565	.757	
7. I typically fish with friends	.377	.783	
8. I feel welcome in the fishing community	.485	.767	

activities. Hunter and angler social networks formulate and propagate institutions, habits, norms, narratives, rituals, and traditions that are essential to hunting and angling cultures (Stedman, 2011; Toth & Brown, 1997). Social aspects also provide motivation for participation and a satisfying experience. Duda et al. (1995) noted that hunters and anglers frequently stop participating when there is no one to accompany them, but the social aspect appears more important to anglers, especially new or less-skilled ones (Chipman & Helfrich, 1988; Wilde, Riechers, & Ditton, 1998). Hunters appear more motivated by being outdoors (Eliason, 2008). According to sportspersons, wildlife management agencies, and other stakeholder groups, the future of hunting and fishing depends on active and robust social networks, which are strong among minority sportspersons (Hunt et al., 2007; Tseng, Huang, & Ditton, 2012). The remaining items in our cultural fit scales focus on perceived strength of familial and community-based networks of hunters and anglers (Table 1).

To operationalize the construct of fit, we adhered to cultural meaning theory and measured respondent perceptions of their culturally specific values and beliefs (Lu, 2006). Hunting and fishing cultures are derived from the development of systems or codes of meaning that facilitate behaviors, relationships, institutions, identities, technologies, and subjectivities and are revealed in a sportsperson's knowledge, theory, conceptualization, and understanding of reality (Hall, 1997). Cultural fit with hunting was measured with six belief statements with a five-point scale of 1 = *strongly disagree* to 5 = *strongly agree*. We used the same five-point scale for measuring eight belief statements to examine fit with fishing. We also collected demographic data on age, gender, education, hunting and angling frequency, and rural upbringing.

Sampling

We randomly selected 6,490 sportspersons from the North Carolina Wildlife Resources Commission Automated License & Vessel Information Network database. The sampling frame comprised North Carolina residents who held a valid license that included a fishing privilege between January 1, 2010 and December 31, 2014. Licensees who were 17 years old or younger on December 31, 2014 were excluded. Records returning duplicate, mail return, deceased, and no future mailings notifications were also deleted from the sampling frame. Sportspersons self-identified as White, Black, Asian, Hispanic, Native American, or Other when purchasing a license. These designations were established by cross-checking with questionnaire responses

before analysis, and deferring to subject survey responses where discrepancies were noted by the research team.

Data collection

To improve questionnaire validity, we pretested the questionnaire with a convenience sample of 50 fisheries and wildlife undergraduates at North Carolina State University. We administered a web survey over five weeks during March and April 2015. We emailed survey participants a cover letter explaining the purpose of the study and a link to the questionnaire. After initial contact, nonrespondents received three reminder emails one week apart (Dillman, Smyth, & Christian, 2014). We contacted nonrespondents by telephone (n = 238, response rate = 76%) and examined the possibility for nonresponse bias. We found that nonrespondent anglers were more likely to have a college degree than respondents and began fishing at an older age. There were no differences for other variables or among hunters. The North Carolina State University internal review board ruled this study exempt (Institutional Review Board #5475).

Analysis

We included sportspersons who only hunted and those who hunted and fished in our hunter category. Our logic is based on Marsinko and Dwyer's (2002) assumption that hunters tend to also fish, but anglers do not necessarily hunt. We then assigned cultural fit scores by computing the mean response for each corresponding measure and creating a composite mean score. We recoded response scales to ensure high scores equated to a greater influence of social networks and tradition on hunting and fishing behavior. We then standardized fit scores for each group by calculating percent based on total points possible for each respondent and then averaging the scores.

Statistical tests were performed with IBM SPSS Statistics 23 (IBM Corp., Armonk, NY), and the level of significance for all tests was 0.05. Scale development incorporated Cronbach's alpha reliability coefficients and principal components analysis (PCA) to measure reliability and construct validity of the statements, respectively. Alpha coefficients greater than or equal to .65 and item-total correlations near or greater than .40 indicated there was little variance among statements, suggesting acceptable reliability (Table 1) (Vaske, 2008). Deleting underperforming items (< .40) indicated a decrease in the total alpha coefficient for the Angler scale so they were retained. This trend did not apply to the Hunter scale, so we deleted two underperforming items (*I typically hunt with friends*; *I feel welcome in the hunting community*). We conducted PCA to assess unidimensionality among the cultural fit statements for both scales. We used Varimax rotation to more carefully evaluate construct validity through an analysis of departures from unidimensionality and the ability of like constructs to measure a psychological variable uniformly (Cortina, 1993; Hattie, 1985; Table 3). Furthermore, we used PCA because we were reducing variables into few components and creating new variables rather than identifying what each factor represents or what caused responses. We retained factor loadings for variables greater than or equal to 0.40 (Vaske, 2008). PCA results showed a moderate to strong degree of construct validity for our measures (Table 3). Factor loadings met the criterion of being greater than or equal to 0.40 (Hair & Black, 2000).

We examined mean differences for hunter and angler item and cultural fit scores based on ethnicity using one-way ANOVA followed by Tukey's HSD test. Partial Eta Squared (PES) was used to estimate effect size for the relationship between independent and dependent variables.

Results

We received 1,048 responses to our web survey for an overall response rate of 16%. Our sample was 65.2% (n = 676) White, 5.3% (n = 55) Hispanic, 13% (n = 135) African American, 5.6% (n = 58) Native Americans, 6.9% (n = 72) Asian, .2% (n = 2) Hawaiian-Pacific Islander, 1.5% (n = 16) Mixed, .1% (n = 1) Arabic, and 2.1% (n = 22) Unknown. We excluded the latter four groups from our analysis due to small sample size, and excluded the Native American group from some angler analyses for the same reason. In our study sample, 19% (n = 195) identified as a hunter only, 38% (n = 396) as an angler, and 43% (n = 446) as both (Table 2).

Results of ANOVA revealed significant differences among groups on three of six measures for the hunter scale and three of eight measures for the angler scale (Table 3). Having a long tradition of hunting within the family was more prevalent among White and Native American hunters. White hunters differed statistically from African American hunters, and White and Native American hunters were distinguished from Hispanic and Asian hunters. Having a hunting role model as a youth was more prevalent among White and Native Americans, who differed statistically from Hispanic hunters. Hunting was most important to the immediate family for Whites and Native Americans, who were distinguished from African American and Asian hunters. Having a long in-family tradition of fishing and a fishing role model as a youth were prominent among White and African American anglers. These groups were statistically distinguished from Asians. African American and Hispanic anglers considered fishing more important within their communities, and these groups were statistically different from Asian anglers.

We detected differences in cultural fit among hunters, $F(4,63.79) = 5.40$, $p = .001$ (Table 4). Hunting fit greatest among White and Native American groups, who were statistically distinguished from the other minority groups, supporting our first hypothesis. Fit was weakest among Asian hunters. Fishing fit with most minority groups, supporting our second hypothesis. Only Asians had lower cultural fit scores for fishing than other groups, $F(3,70.99) = 3.69$,

Table 2. Sample demographics.

	Hunters					Anglers				
Race/ Ethnicity	Male %(n)	Age ($\bar{X}$)	Farm or ranch as child %(n)	Min. education	Hunting Frequency ($\bar{X}$)†	Male %(n)	Age ($\bar{X}$)	Farm or ranch as child %(n)	Min. education	Fishing Frequency ($\bar{X}$)†
White	93 (397)	48	81 (261)	High school (99%)	5.3	80 (175)	48	45 (95)	High school (99%)	4.9
Hispanic	100 (27)	44	8 (2)	High school (100%)	4.3	78 (18)	44	26 (6)	High school (100%)	5.3
African American	96 (52)	51	52 (24)	High school (100%)	4.9	83 (54)	51	35 (21)	High school (100%)	4.8
Asian	90 (18)	39	24 (4)	High school (100%)	3.8	83 (35)	39	26 (10)	High school (100%)	4.4
Native American	95 (37)	47	87 (32)	High school (100%)	5.6	11 (79)	45	58 (7)	High school (100%)	5.6

†Numeric responses were collapsed for analysis (e.g., 3 = 3 to 5 days; 4 = 6 to 10 days; 5 = 11 to 20 days; 6 = 21 to 30 days).

Table 3. Results for principal component analysis and test for differences in mean(SE) scores for cultural fit scale items.

	Component 1	Component 2	White[W]	Hispanic[H]	African American[AA]	Native American[AI]	Asian[A]	F(*p*)
Hunters	2.27	1.81						
1. There is a long tradition of hunting in my family	.819		4.11 (.060)	2.93 (.32) [W, AI]	3.60 (.19)[W]	4.26 (.17)	3.00 (.32)[W, AI]	7.54(.00)*
2. I had a hunting role model when I was a youth	.810		4.19 (.060)	3.37 (.30) [W, AI]	3.79 (.21)	4.31 (.18)	3.80 (.35)	2.83(.03)*
3. I typically hunt with my family	.714		3.61 (.060)	3.04 (.32)	3.36 (.21)[W, AI]	3.46 (.19)	3.30 (.36)[W, AI]	1.84(.12)
4. Hunting is important to my immediate family	.604		3.84 (.056)	3.03 (.32)	3.23 (.19)	4.03 (.18)	3.00 (.30)	5.34(.00)*
5. Hunting is important to my community		.875	3.61 (.051)	3.41 (.20)	3.21 (.18)	3.77 (.20)	3.15 (.26)	2.20(.07)
6. Hunting is important to my friends		.838	3.96 (.050)	3.89 (.20)	3.63 (.17)	4.15 (.16)	3.55 (.34)	2.63(.03)
	37.87%	30.16%						
Anglers[†]	2.40	2.31						
1. There is a long tradition of fishing in my family	.824		3.72 (.085)	3.17 (.34)	3.79[A] (.16)	4.57 (.20)	2.79[W] (.22)	5.95(.00)*
2. I had a fishing role model when I was a youth	.770		3.93 (.083)	3.48 (.33)	4.25[A] (.15)	4.29 (.27)	3.14[W] (.22)	6.17(.00)*
3. I typically fish with family	.682		3.64 (.077)	3.91 (.25)	3.69 (.13)	4.07 (.24)	3.48 (.21)	.758(.52)
4. Fishing is important to my immediate family	.707		3.36 (.084)	3.52 (.27)	3.65 (.12)	4.07 (.24)	3.19 (.21)	1.44(.23)
5. Fishing is important to my community		.665	3.37 (.070)	3.65 (.17) [A]	3.52 (.11) [A]	3.79 (.28)	2.95 (.15)	3.92(.01)*
6. Fishing is important to my friends		.866	3.38 (.070)	3.48 (.27)	3.52 (.14)	3.79 (.28)	3.27 (.16)	.60(.62)
7. I typically fish with my friends		.791	3.49 (.082)	3.78 (.22)	3.55 (.15)	3.79 (.33)	3.52 (.17)	.44(.72)
8. I feel welcome in the fishing community		.580	4.22 (.064)	4.30 (.18)	4.23 (.12)	4.07 (.27)	3.88 (.15)	1.74(.16)
	29.99%	28.90%						

Note. Rotation Method: Varimax with Kaiser Normalization; KMO & Bartlett's Test of Sphericity = .000 for both, < .05 = good.
*Welch statistic used because unequal variances assumed.
†Native Americans were not included in angler ANOVA.

Table 4. Cultural fit score comparison by racial/ethnic affiliation.

	Hunters					Anglers				
Group	n	Mean	SD	Stnd. Score[†]	p^*	n	Mean	SD	Stnd. Score[†]	P^*
White[W]	429	23.32	4.90	77.74	—	218	29.13	5.80	72.83	—
Hispanic	27	20.15	6.02	67.16	.017[W]/.026[AI]	23	29.30	6.21	73.26	—
Afr. Amer.[AA]	54	20.56	6.26	68.52	.002[W]/.015[AI]	65	30.20	5.56	75.50	—
Asian	20	19.80	6.79	66.00	.025[W]/.028[AI]	42	26.21	6.33	65.54	.017[W]/.004[AA]
Native Amer.[AI]	39	23.97	4.64	79.91	—	14	32.43	3.76	81.07	—
Welch Statistic	**df1**	**df2**	**Sig.**			**Welch Statistic**	**df1**	**df2**	**Sig.**	
5.40	4	63.79	.001			3.69	3	70.99	.016	

Note. Unequal variance assumed; letters indicate a significant difference between groups; effect size (Eta^2): Hunters: .051; Anglers: .079.
*p value based on Tukey HSD.
†% of total fit score points possible.

$p = .016$. Standardizing fit scores revealed that fishing had a better fit than hunting among African American, Hispanic, and Native American groups (Table 4).

Discussion and implications

There is a cultural fit gap among hunters in North Carolina. Rural upbringing (Coleman, Ganong, Clark, & Madsen, 1989) and the role of intergenerational transfer (Adalbjarnardottir & Hafsteinsson, 2001) may underscore parallels between White and Native American hunters in this study. Rurality and socialization of children into hunting have helped Whites and Native Americans maintain hunting's cultural relevance, reifying hunting as a social obligation to family, pillar of social interaction, and means for cultural reproduction (Barta, 1976; McCarty, 1971; Ryan & Shaw, 2011; Serenari & Peterson, 2016). Weaker fit of hunting among Hispanic, African American, and Asian hunters in our study was associated with decreased relevance of tradition-making and role models, and diminished family participation.

Segmentation of recruitment, retention, and reactivation (R3) strategies (i.e., tailoring them to a diverse clientele; Responsive Management, 2008) is essential to account for cultural fit differences related to hunting. Historically, hegemonic approaches have been used to perpetuate predominant White hunting cultures in the United States and Canada. One way to segment R3 efforts for underserved hunting populations would be to reduce the emphasis on the essential nature of heritage because it may not resonate with most minorities: it is simply not their heritage. We also note that heritage projects and discourse are fundamentally exclusionary, celebrating particular historical people and events, potentially "resulting in an uneasy relationship between abstract idealized citizenship on the one hand and the valorization of previously oppressed identity claims on the other" (Weiss, 2007, p. 414). There is a need for scholars and R3 actors to examine how heritage discourse and hegemonic practices attract and repel prospective minority hunting supporters. Future research rooted in theories of marginalization or assimilation (Floyd & Stodolska, 2014) or the cultural politics of nature (Byrne, 2012) may facilitate efforts to unravel how more nuanced aspects of hegemony and heritage shape minority participation in hunting. Further, instead of persuading minorities to espouse an idealized citizenship within a White-dominated hunting society, R3 actors should focus on building long-range commitments that may increase participation rates and satisfaction as well as a diverse network of political and financial supporters.

We suggest sportspersons have a *habitus* or system of dispositions that regulates the accumulation of cultural capital (Bourdieu, 1984) and, therefore, interest and participation in hunting. If not useful for navigating everyday life, it is unlikely that either of these activities will be culturally reproduced. Crafting culturally specific and reproducible R3 models specific to hunting, bolstered by an improved understanding of why hunting does not comprise one's *habitus*, would avoid unworkable strategies such as inculcating minorities to exhibit the preferences of Whites or deploying a single R3 model that tries to engage all groups at once. Achieving an enhanced understanding of what knowledge, behaviors, or experiences are good, enjoyable, perceived as a birthright, and worthy of replicating or passing on to other generations can help elicit the value of hunting among minority groups. When this understanding has been achieved, then R3 actors can help minority constituencies overcome what Floyd, Nicholas, Lee, Lee, and Scott (2006) labeled intrapersonal (e.g., increasing knowledge and familiarity) and interpersonal (e.g., providing partners or peer-groups) constraints (p. 365). At present, the cart has been put before the horse.

As evidenced by fishing's superior cultural fit among three minority groups in our study, hunting may never be an activity that becomes culturally important to some minorities (Bissell, Duda, & Young, 1998). Thus, a segmentation approach appears less important to reaching some anglers. Our results may speak to the nature of fishing (e.g., acceptable and normative behaviors, knowledge, goals, processes) and how it complements aspects of human well-being better than hunting. In a comparison of hunting and fishing, Tseng et al. (2012) stated that the goals of hunting, such as species considerations or challenge aspects, may not resonate with groups that prioritize other aspects of well-being, such as shared experiences or socialization. Respondents who agreed most strongly with friends and community items in our study self-reported belonging to racial/ethnic groups favoring collectivism (Gaines et al., 1997; Hunt & Ditton, 2001; Hunt et al., 2007; Tseng et al., 2012). Linkages between collectivism and well-being may better explain fishing's cultural fit among some minority groups than tradition-making or mentorship processes. This possibility requires further investigation, however.

Implications

Actors seeking to develop and recruit minority sportspersons might promote forms or ways of hunting and fishing that are perceived as inclusive to all members of an individual's social network, or, more generally stated, a nontraditional pathway approach (Larson et al., 2013). It does not appear adequate to market hunting or fishing as solely individual or family bonding activities to people who identify with Hispanic, African American, or Asian groups. Future R3 efforts should continue to focus on nuclear and extended family members but emphasize total affiliation, where equal attention is paid to the array of community actors who may offset limited familial mentorship opportunities or tradition-based mechanisms. Further, social networks will be necessary for urban dwelling sportspersons to continue these activities without external support. Capacitating group outings with equipment or logistical planning services in perpetuity is unsustainable for R3 actors such as state wildlife agencies, and prospective sportspersons do not give back to conservation unless they can continue without such support. In addition to appealing to the individual, perhaps R3 actors need to build a sportsperson community among prospective minority sportspersons. Research examining the efficacy of non-traditional pathways will help R3 actors focus their attention and resources and provide valuable insight on how to appeal to an array of prospective hunting and fishing supporters.

Cultural fit scale research

A greater focus on the complex decision making underscoring the choice to be socialized or not into hunting and fishing is required. Current limitations of predicting what drives individuals to be socialized into hunting and fishing culture are a function of an agential focus and inattention to culture's many facets, including knowledge, institutions, values, norms, and identity. Establishing a multiple criterion measure to account for cultural fit and different scales of influence can help target aspects of culture that facilitate and constrain decisions to socialize into hunting and angling and not revealed by single criterion measures. Ethnographic methods may provide valuable insights related to the dynamic and processual perspectives of culture not addressed in this study. Further, racial or ethnic minorities may share similar scores on cultural fit scales without perceiving their hunting or fishing culture as being constituted of individuals with like ethnicities. Therefore, future research could determine the degree to which cultural fit for minorities reflects shared racial and ethnic cultures outside hunting and fishing versus shared cultures associated with hunting and fishing. Finally, we note that some minority groups may find higher cultural fit in some types of hunting and fishing and not others. Evaluating cultural fit within hunting and fishing niches (e.g., bow hunting, trotline fishing) many reveal novel insights.

Conclusion

Ethnic differences in the cultural fit of hunting and fishing are, at least in part, moored to the ways these practices complement a group's cultural milieu, as we attempted to illustrate in this article. We focused on two important aspects of culture: social networks and tradition/heritage. Our research highlights the importance of studying sportspersons who are not usually considered in general sportsperson population surveys since they compose such small but growing percentages. This research also established there may be a gap in the cultural fit of hunting as it relates to race and ethnicity, cultural fit is more broadly shared across minority groups for fishing, and the fast-growing populations in the United States report low cultural fit for hunting (Hispanic, African American, and Asian) and fishing (Asian). A segmentation approach is necessary for assessing hunting-based R3 expectations and reevaluating engagement strategies. We also believe that an appeal to the range of social actors within a sportsperson's network is required for maximizing hunting and fishing R3 efforts among culturally diverse groups.

The key challenge for R3 actors is to make these activities culturally important to different groups despite a range of constraints and value systems. There has been an emphasis on selling minorities on what White sportspersons believe are the benefits of these activities and assimilating minorities into the dominant sportsperson culture. We suggest researchers and practitioners seek out minority perspectives to understand what they think the benefits are and if and how they think lasting commitments to these activities should be promoted. Values and norms about hunting, fishing, and trapping may already exist within these communities, but because of a historically large racial and ethnic gulf that exists between R3 actors and these groups, the former is quite unaware of them. Establishing a cultural fit scale should be a long-range research goal to better understand cultural differences and how to address them.

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