

Ethnic Classification in Southeastern Puerto Rico: The Cultural Model of “Color”*

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Abstract

This article presents a systematic ethnographic study of emic ethnic classification in Puerto Rico, including a replication and extension of Marvin Harris’s (1970) seminal study in Brazil. I address three questions: (1) what are the core emic categories of color? (2) what dimensions of semantic structure organize this cultural domain? and (3) is the assumption of a shared cultural model justified? Data are from two sets of ethnographic interviews in southeastern Puerto Rico, including 23 free listing interviews and 42 structured interviews using Harris’s standardized facial portraits. Results indicate a small core of salient emic categories with well-defined semantic structure and high interinformant agreement, reflecting shared cultural understandings of color. I discuss how systematic ethnographic methods can contribute to comparative research on ethnic classification.

The prevailing view of ethnicity in Puerto Rico emphasizes ambiguity as a defining feature of emic ethnic classification. According to this view, the primacy of phenotype over descent leads to the proliferation of categories with uncertain boundaries and fluid meaning. In contrast, in the mainland United States the rule of hypodescent sustains a simple classification scheme founded on a well-defined, binary opposition between *black* and *white*. Similar contrasts are drawn between other Latin American societies and the United States. Although more and more researchers question such contrasts (Rodríguez 2000; Skidmore 1993; Winant 1994), one basic question remains neglected: To what extent is there a

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shared cultural model of emic ethnic classification in the United States, in Puerto Rico, or in other societies?

This article takes up that question with an exploratory ethnographic study of ethnic classification in southeastern Puerto Rico. Its unique contribution is to apply methods recently developed by cognitive anthropologists to elicit cultural knowledge and to measure the extent to which such knowledge is shared. In that regard, it revives a program of research using systematic ethnographic methods that Marvin Harris and his students launched 40 years ago in Brazil (Harris 1970; Harris and Kottak 1963; Kottak 1967; Sanjek 1971).

The most well-known result from Harris's studies is his seminal article, "Referential Ambiguity in the Calculus of Brazilian Racial Identity" (Harris 1970). In that article, Harris argued that the Brazilian system of ethnic classification is characterized by the "maximization of noise and ambiguity," a view to which many still adhere. Yet just a year after Harris's article appeared, Sanjek (1971) argued that Brazilian racial classification was more coherent and consensual than his mentor had suggested. Some researchers agree with Sanjek (e.g., Telles 2002:435; Wade 1993:4; Whitten 1985:42), while others accept Harris's position (e.g., Bailey 2002:428; Loveman 1999:893; Yelvington 2001:243). Despite these differing conclusions, little systematic ethnographic research has been done on emic ethnic classification in Brazil or in other parts of Latin America since the early 1970s.

This gap is unfortunate because it coincides with the development of methods for answering the questions Harris, Sanjek, and others were asking (D'Andrade 1995). Indeed, Harris and Sanjek saw this development coming. Harris (1970:2) cautioned that "clarification of the nature of the ambiguity in the Brazilian 'racial' calculus awaits the development of cross-culturally valid methods of cognitive analysis." Sanjek (1971:1127) saw "the domain of Brazilian racial vocabulary" as "an arena for the testing of quantitative procedures in cognitive anthropology." In particular, he challenged cognitive anthropologists to investigate the distribution of shared knowledge and to test their assumptions about the existence and location of cultural boundaries.

Three decades later, we have well-defined procedures for answering this challenge (Handwerker 2002; Ross 2004). Methodological developments in four areas are relevant. First, ethnoscientists in the 1960s commonly relied on "a single informant to verify the psychological reality of a componential analysis" and seldom asked "how many informants told the ethnographer something and how thoroughly responses were cross-checked among different informants" (Sanjek 1971:1127). Today, there are established procedures for selecting ethnographic informants to sample a broad range of life experiences and cultural knowledge (Handwerker and Wozniak 1997; Johnson 1990). Second, many pioneering studies in cognitive anthropology lacked "ethnographic discovery procedures" for eliciting the terms in a cultural domain (Sanjek 1971:1127). We now have

systematic methods for defining the content and boundaries of a domain without imposing the ethnographer's conceptual framework (Ross 2004; Weller and Romney 1988). Third, at the time of Harris's studies, methods for detecting semantic structure were in their infancy (e.g., Metzger and Williams 1966). There have been important recent advances in such methods (e.g., Romney et al. 2000). Finally, a fundamental problem, until recently, was the inability to estimate precisely the degree of intracultural variation or to test the assumption that a group of informants share a single culture. Significant progress has been made, resulting in formal methods to measure the amount and distribution of cultural knowledge (Handwerker 2002; Romney et al. 1986).

These developments make it a good time to revive and expand Harris's program of research. There is likely to be interest in applying these methods in Brazil for direct comparison with Harris's conclusions, but the comparative study of emic ethnic classification will benefit from systematic ethnographic research in other societies too. In this article, I report findings from an ethnographic study during 2000–2001 in a coastal town of southeastern Puerto Rico. In addition to participant observation and semistructured interviews, I replicated and extended Harris's (1970) method, using the original standardized facial portraits that both he and Sanjek used. The results provide evidence of a coherent and highly structured cultural model of *color* (ko-lór) that appears to be shared across divisions of age, sex, class, and color in this part of Puerto Rico. This preliminary finding warrants further research on emic ethnic classification in Puerto Rico, and it illustrates how systematic ethnographic methods complement more standard approaches to the study of ethnicity in Latin America and elsewhere.

Background

In the mid-1900s, Puerto Rico came to be seen by North American and Puerto Rican scholars alike as a so-called racial democracy (Arana Soto 1976; Blanco 1948; Petrullo 1947; Rogler 1940; for an exception, see Gordon 1949). More recently, this benign view has been discredited (Muñoz Vázquez and Alegría Ortega 1999; Rivera Ortiz 2001), and there is renewed interest in understanding the causes and consequences of racism as it exists in Puerto Rico (Dávila 1997; Duany 2002; Godreau 1999, 2000; Torres 1995).

The notion of racial democracy is a relative one, and the reference in classic North American scholarship is the pre-civil rights era United States. Consequently, a key issue in both the construction and critique of Puerto Rico as a racial democracy is the contrast between the cultural model of *color* in Puerto Rico and that of *race* in the United States. Typically, this contrast emphasizes three themes.

First, whereas the model of racial classification in the United States is regarded as a relatively simple system with few emic categories, the Puerto Rican model

of *color* is marked by the proliferation of terms along a continuum from *blanco* (white) to *negro* (black). For example, Duany (2002:238) lists 19 “major folk racial terms,” and Godreau (2000) mentions at least a dozen, including *indio*, *moreno*, *mulato*, *prieto*, *jabao*, and the most common term, *trigueño* (literally, “wheat-colored”). This abundance of terms is a persistent theme in the ethnographic record (Hoetink 1967; Mintz 1956; Rogler 1944). However, to my knowledge, no study has ever systematically elicited emic ethnic categories in Puerto Rico.

Second, previous work emphasizes the distinct organizing principles of ethnic classification in Puerto Rico and the mainland U.S. Traditionally, the rule of hypodescent ensures that anyone with a perceptible trace of African ancestry is defined as *black* in the U.S. By contrast, the ascription of *color* in Puerto Rico is primarily a matter of physical appearance—especially as defined by skin color, hair texture, and facial features—such that not even siblings need be assigned to the same emic category (Duany 2002; Hoetink 1967; Seda Bonilla 1991). Many researchers agree that skin color and hair texture are especially important criteria of *color* and that the plethora of terms can be grouped into three basic categories: white, brown, and black. Yet there is relatively little systematic evidence to support these assumptions. Seda Bonilla’s (1991) classic work, first published in 1963, remains the only systematic study of how the semantic structure of *color* in Puerto Rico is organized.

Third, ethnographers have long been fascinated with the “elasticity and ambiguity of Puerto Rican racial terms” (Duany 2002:241). For example, Rogler notes the “double meanings and ambiguities” of such terms (1944:448) and suggests that “the good investigator, who is seeking to understand race distance in Puerto Rico, would not have his contribution seriously impaired were he to ignore semantics entirely” (1944:453). Others reinforced this view by noting the dependence of *color* on class. Mintz (1956:411) remarks that “an individual’s ‘color’ may ‘vary’ in accord with changes in his socioeconomic status.” However, some scholars point out that, despite ambiguity in the referential meaning of *color* categories, there is “attributed to each a corresponding social status” (Gordon 1949:298). “Nor indeed,” Lewis (1963:228–29) contends, “does the use, however charming, of characteristic euphemisms to refer to racial admixture—*pardo*, *moreno*, *trigueño*—disguise the fact that social acceptance goes hand in hand with the degree of whiteness in skin texture.”

These themes form three empirical questions this study addresses. First, what are the core emic categories that constitute the cultural model of *color* in southeastern Puerto Rico? Second, what are the dimensions of semantic structure that organize this model? Third, how shared is the cultural model of *color* across divisions of age, sex, class, and color in this region of Puerto Rico?

Methods

RESEARCH SETTING

I addressed these questions during fieldwork in the southeastern coastal *municipio* (municipality) of Guayama, home to 44,301 people according to the 2000 Census (United States Bureau of the Census 2001). Guayama's history and economic development are closely linked to its fertile soils, which made it one of the most important centers of the Puerto Rican sugar economy for more than 150 years (Scarano 1984). Although the flow of African slaves to Puerto Rico never developed on a large scale by Caribbean standards, sugar-producing areas of the island had concentrated slave populations (Díaz Soler 1965). In Guayama, one of the three highest sugar-producing *municipios* in Puerto Rico, the slave population grew 623% from 1812 to 1828, as sugar production boomed. By that time, slaves formed nearly 30% of the local population (Scarano 1984:78).

One legacy of sugar is that the proportion of people who claim African ancestry is concentrated in coastal towns like Guayama. In 2000, for the first time in 50 years, the census asked Puerto Ricans on the island to identify their "race." The results are difficult to interpret, given the emic inappropriateness of U.S. racial categories and strategies of *blanqueamiento*, or whitening, that lead many to downplay their African ancestry (Duany 2002). Nevertheless, the percentage of people who reported their race as "Black or African American"—alone or in combination with some other race—was greatest in the coastal *municipios*. In Guayama, 13.2% self-identified as black (alone or in combination), as compared to the island-wide rate of 9.2%. This pattern has drawn other ethnographers to the southern coast of Puerto Rico (Godreau 1999, 2000; Mintz 1956, 1974; Torres 1995).

SELECTION OF INFORMANTS

The data reported here are based on ethnographic interviews with two independent samples of informants. The first sample ($n=23$) participated in free-listing interviews, while the second ($n=42$) completed two structured tasks with Harris's (1970) standardized facial portraits. The sampling strategy is based on the insight that the socially constructed nature of cultural phenomena violates the assumption of case independence in classical statistical theory (Handwerker and Wozniak 1997). Because people acquire and transmit cultural meaning through social interaction, efficient ethnographic sampling designs should select informants who represent a range of variability in life experiences and social contexts. Handwerker and Wozniak (1997) validated this strategy experimentally by showing that probability and convenience samples yield identical conclusions about cultural data. Further, Weller (1987) demonstrated that the Spearman-

Brown prophesy formula can be applied to informants, rather than items, to establish the validity and reliability of cultural data. With modest levels of interinformant agreement (.50), conclusions based on samples of as few as nine informants are estimated to have excellent validity (.95) and reliability (.90) (Handwerker and Wozniak 1997:874; Romney et al. 1986:326).

On these grounds, I selected informants to maximize heterogeneity in age, sex, social class, and color. One strategy was to recruit informants from *caseríos* (public housing), *barrios* (lower and lower-middle class neighborhoods), and *urbanizaciones* (middle and upper class subdivisions). Torres (1995:34) describes how these neighborhood types are associated with divisions—real and alleged—of class and color. *Caseríos* are commonly associated with *negros* (blacks) and with drugs, alcoholism, prostitution, and violent crime. *Barrios* are likewise associated with blackness and low social status, though many residents of *barrios* are homeowners. The expression “*del barrio*” (from the *barrio*) is often used as a derogatory term roughly meaning uneducated and uncultured. It may also be used as a euphemism for *negro* (Godreau 2000). *Urbanizaciones*, by contrast, are associated with higher social status, and their residents are generally assumed to be *blancos* (whites).

The sampling strategy also took advantage of Guayama’s expanse from the central mountain chain to the Caribbean coast, with a developed urban center. The contrast between interior and coastal areas captures what Torres (1995:35) describes as a “racialized landscape,” in which the mountainous interior is associated with whiteness, and the coast is associated with blackness. This legacy of sugar and slavery is evident in the 2000 Census. The highest percentage of people self-identifying as “Black or African American” occurred in the coastal *barrios* of Guayama (27.1%), with the lowest percentage in interior regions (3.6%).

INTERVIEW PROCEDURES

The first set of interviews elicited 23 free lists (Weller and Romney 1988) of terms that refer to *color*. Free listing is a simple interviewing technique that involves asking informants to list freely all the *color* categories they know. Free listing is an effective method for defining the contents and boundaries of a cultural domain using the language, concepts, and categories that are meaningful to informants. For coherent domains, samples of 20–30 informants are generally adequate; additional informants add few new items (Borgatti 1998; Ross 2004).

The second set of interviews replicated and extended Harris’s (1970) technique for eliciting emic color categorizations of standardized facial drawings. Based on previous ethnography (Harris 1952; Harris and Kottak 1963), Harris and colleagues developed 36 male and 36 female drawings to represent all possible combinations of three skin tones, three hair forms, two nose widths, and two lip sizes for each sex; all other features are held constant. Sample drawings were published in Harris’s (1970) report.¹

Following Harris, I presented the drawings in a unique randomized order and allowed each informant to glance through the deck before identifying the first portrait. I then asked respondents to tell me how a person like the one depicted in each portrait would be classified in terms of *color* in Puerto Rico. Next, I extended Harris's technique by asking respondents to sort the 36 male drawings into piles of faces they thought were similar (Weller and Romney 1988:20). The identification and pile sort data are analyzed to assess patterns of semantic structure and interinformant agreement. Identification data also provide a validity check of the free list results.

Results

1. CONTENTS AND BOUNDARIES OF CULTURAL DOMAIN

Table 1 presents descriptive results for the most commonly listed items in the free list interviews. Frequency indicates the number of informants who listed each term; average rank reflects how soon informants mentioned each item. Smith's salience index (S) incorporates both how often and how early items occur in informants' lists by computing each item's average percentile rank across all lists (Smith 1993). Higher values of Smith's S indicate greater cultural salience.

The distribution of frequency and of Smith's S help to define the core and peripheral items in a cultural domain (Borgatti 1998). Table 1 suggests that the cultural model of *color* includes relatively few core emic categories. Overall, informants listed 51 unique terms, but nearly two-thirds of these items were listed by a single informant. Only the first six items were mentioned by at least two-thirds of the informants, with the frequency dropping off rapidly for subsequent terms. Likewise, the highest salience scores are for the first four terms—*negro*, *trigueño*, *jabao*, and *blanco*—with somewhat lower scores for *indio* and *prieto* and substantially lower scores for the remaining terms.

The identification task provides independent confirmation of this result (Table 2). Most responses to this open-ended task were idiosyncratic variations of core terms plus a modifier. Examples include "*blanco con facciones de negro*," "*blanco con rasgos negros*," and "*blanco con descendencia de negro*," all of which modify *blanco* to indicate features associated with *negro*. Such responses were recoded as *blanco+*, *trigueño+*, *indio+*, and *negro+*. I retained the categories *blanco*, *trigueño*, *negro*, *jabao*, *indio*, *prieto*, *mestizo*, and *moreno* and recoded a small number of unusual responses as *other*.²

Table 2 gives two sets of frequency statistics: (1) the number of respondents who used each category to identify the facial portraits and (2) the total number of times each category was used across the 3,024 categorizations (42 respondents by 72 faces). Both sets of results point to the primacy of a small set of emic categories. *Blanco*, *trigueño*, and *negro* were used by at least 90% of respondents, while *jabao*, and *indio* were used by more than 80%. None of the other categories was used

Table 1. Free List Descriptive Statistics for Domain of *Color* (N = 23)

Item	Approximate Meaning	Frequency	Average Rank	Smith's S
1. Negro	Black; may be derogatory	20	2.60	.69
2. Trigueño	Literally, wheat-colored; intermediate category	19	3.58	.51
3. Jabao	Light-skinned with kinky hair	19	3.74	.54
4. Blanco	White	18	3.39	.57
5. Indio	Literally, Indian; brown-skinned with straight hair	16	5.88	.28
6. Prieto	Black; features equivalent to <i>negro</i>	15	5.93	.28
7. Jincho	Pale-skinned; may be derogatory	6	5.83	.15
8. Moreno	Dark-skinned; may refer to African-Americans	5	6.60	.09
9. Colorao	Redheaded; reddish skin with freckles	5	6.60	.09
10. Negroto	Literally, little black; used as term of endearment	3	3.00	.10
11. De color	Of color; used as euphemism for <i>negro</i>	3	10.00	.03
12. Cano	Blonde, light-skinned	3	9.00	.04
13. Canela	Literally, cinnamon; brown-skinned	3	7.67	.05
14. Café con leche	Literally, coffee with milk; light brown-skinned	3	5.00	.10
15. Albino	Albino	3	7.00	.03
16. Rubio	Blonde	2	8.50	.02
17. Papujo	Pale-skinned; may be derogatory	2	8.00	.03
18. Mulato	Mix of <i>blanco</i> and <i>negro</i>	2	1.50	.08
19. Mestizo	Mix of <i>blanco</i> and <i>negro</i>	2	3.00	.07
20. Carabalí	Very dark-skinned; derogatory	2	8.00	.04

Table 2. Frequency Statistics for Unique Categorizations in Identification of Standardized Faces, by Respondents ($N=42$) and Categorizations ($N=3024$)

	Respondents		Categorizations	
	Frequency	Percent	Frequency	Percent
Blanco	41	97.6	553	13.2
Trigueño	40	95.2	808	19.2
Negro	38	90.5	555	13.2
Jabao	34	81.0	269	6.4
Indio	34	81.0	417	9.9
Blanco +	20	47.6	64	1.5
Trigueño +	20	47.6	49	1.2
Negro +	13	31.0	47	1.1
Prieto	13	31.0	108	2.6
Indio +	10	23.8	24	.6
Mestizo	9	21.4	85	2.0
Other	8	19.1	14	.3
Moreno	8	19.1	31	.7

by half of the respondents, and even the most frequently used of these are either synonymous with (e.g., *prieto* for *negro*) or modifications of the core categories. That these core categories were the most frequently modified terms underscores their salience as the basic emic categories of *color* (cf. Sanjek 1971).

2. SEMANTIC STRUCTURE

Because Harris's facial portraits vary systematically by skin tone, hair texture, nose shape, lip form, and sex, the identification data provides information about which physical features are associated with each emic *color* categorization. Figure 1 shows a correspondence analysis (Greenacre 1984) of these associations.

This graph suggests that distinctions among *color* categories depend primarily on contrasts in skin color and hair form. For example, of all categorizations made as *jabao*, 88% had light skin, and 95.5% had kinky hair. Of those identified as *indio*, 97.5% had dark or intermediate skin, and all had straight or wavy hair. Similar contrasts are evident for *blanco* and *negro*, while *trigueño* is strongly associated with intermediate skin tone and hair form. The relative insignificance of sex, nose shape, and lip form is evident from their position in the middle of Figure 1 and from their not being associated with one term more than another. Figure 1 also suggests that light skin and kinky hair are particularly distinctive features. The difference between *blanco* and either *trigueño* or *indio* is light skin; the difference between *negro* and either *trigueño* or *indio* is kinky hair. Likewise, the difference between *jabao* and *negro* is light skin, while the difference between *jabao* and *blanco* is kinky hair.

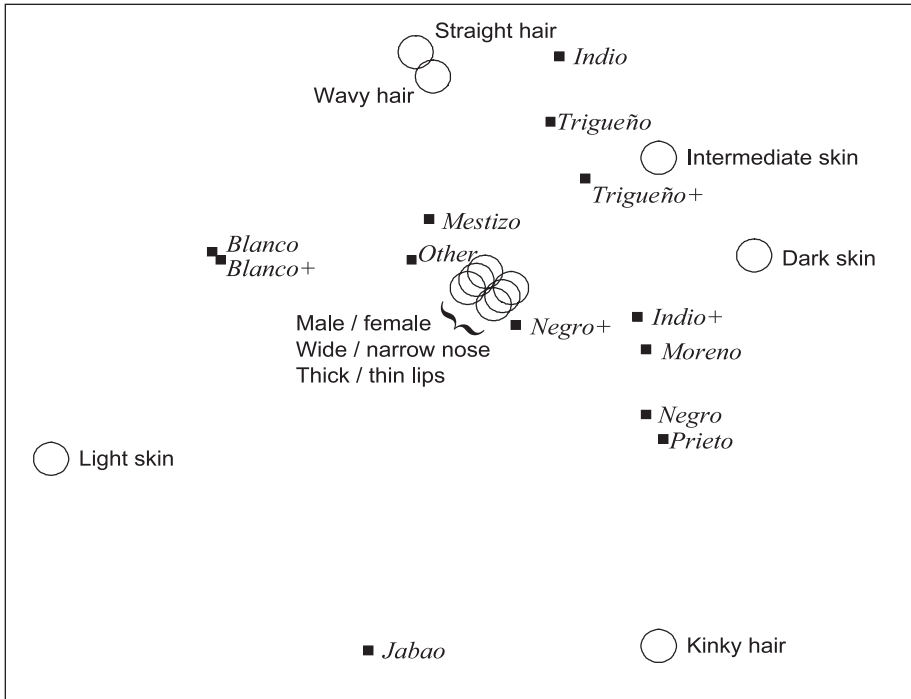


Figure 1. Correspondence Analysis of Features by Color, from Identification Task (N=42)

The pile sort data provide a more direct test of the relationships among emic *color* categories and allows us to estimate more precisely the relative salience of skin color, hair type, and facial features as criteria of *color*. Pile sorts produce direct measures of emic similarity among items based on the number of times any two items occur in the same pile. These similarity data can be represented graphically with multidimensional scaling (MDS) to illustrate the cognitive relationships among items across all respondents (Kruskal and Wish 1978). Figure 2 displays a two-dimensional MDS graph for the pile sort data.³

Figure 2 can be read in terms of both clusters and dimensions. The clustering of items suggests that the domain consists of five major groupings corresponding to the core categories elicited from free lists and the identification task. *Trigueño* and *indio* are more similar to one another than are any of the other groupings, but the overlap is not complete. Hierarchical cluster analysis of the pile sort data (not shown) confirmed five major groupings.

Figure 2 also corroborates that skin color and hair form are the primary organizing dimensions of the domain. The graph shows lines produced by PROFIT (PROperty FITting) analysis, a regression-based technique for testing hypotheses about the attributes that influence judged similarity among items

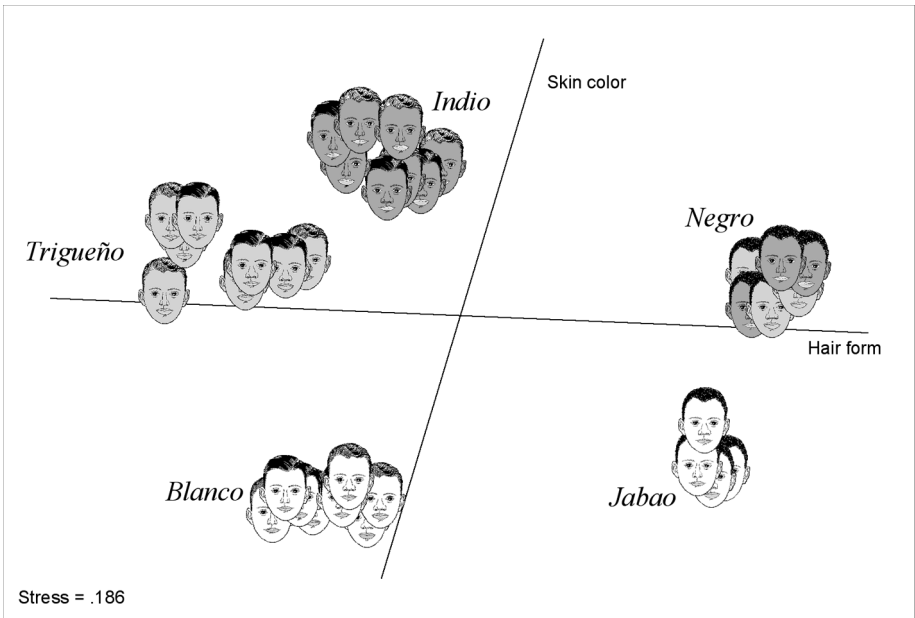


Figure 2. Multidimensional Scaling (MDS) with PROProperty FITting (PROFIT) Analysis of Pile Sorts ($N=42$)

(Kruskal and Wish 1978:35). It treats map coordinates from an MDS plot as independent variables and attributes that are hypothesized to influence perceived similarity as dependent variables. PROFIT analysis estimates that skin color ($R^2 = 0.87$, $p = .001$) and hair type ($R^2 = 0.70$, $p = .001$) are the most salient dimensions, but it provides no evidence that either nose or lip form influences perceived similarity ($R^2 = .00$, $p = .948$, and $R^2 = .01$, $p = .789$, respectively). PROFIT lines are interpreted as dimensions organizing the graph, not as boundaries separating it. The skin color dimension runs from dark at the top to light at the bottom; hair form runs from straight and wavy hair on the left to kinky hair on the right. The location of items on either dimension is determined by drawing a perpendicular line from each item to the PROFIT line. On the skin color dimension, for example, the faces identified as *blanco* are lightest, followed by *jabao* and *trigueño*, with *negro* and *indio* falling at roughly the same end of the spectrum.

These bivariate results are confirmed by a multivariate model, using the multiple regression quadratic assignment procedure, or MRQAP (Hubert and Schultz 1976). MRQAP treats whole matrices as variables in a regression analysis and generates its own probability distribution by randomly permuting rows and columns of a data matrix. This analysis treats the portrait-by-portrait

aggregate similarity matrix from the pile sorts as the dependent matrix. The four independent matrices are portrait-by-portrait similarity matrices for each of the four attributes: skin, hair, lips, and nose. Overall, these attributes explain 55% of the variance in perceived similarity ($p < .001$). Hair type makes the largest contribution to judged similarity among the portraits ($\beta = .54, p < .001$), while skin color plays nearly as large a role ($\beta = .50, p < .001$). Nose form is less important ($\beta = .26, p < .001$), and lip shape does not appear significantly to influence ethnic similarity, independent of other attributes ($\beta = .07, p = .06$).

3. INTERINFORMANT AGREEMENT AND CULTURAL CONSENSUS

Romney, Weller, and Batchelder's (1986) cultural consensus model provides a formal mathematical test of the assumption that informants' responses reflect a shared cultural model of *color*. The cultural consensus model conducts a minimum residual factor analysis of an informant-by-informant similarity matrix (corrected for guessing) to determine whether a single underlying factor explains the pattern of interinformant agreement. If the assumption of a single culture holds, then consensus analysis should yield a first factor that explains most of the variance. This factor represents the underlying cultural model that shapes informants' responses. The model fits well if the eigenvalue ratio of the first factor to the second is at least 3:1 and if the average knowledge across informants is high, as estimated by first factor loadings.

Cultural consensus analysis of the identification task data was implemented in ANTHROPAC software (Borgatti 1996). The analysis indicates that the assumption of shared culture holds. The first factor explains roughly 76% of the variance, and its eigenvalue is more than four times larger than that of the second factor. The respondents' moderately high average of estimated knowledge (.62 \pm .15) suggests that knowledge about the model of *color* classification is shared across the sampled range of variation in age, sex, class, and color. The model also provides an idealized estimate of the culturally appropriate responses to the identification task. The resulting consensus classification of Harris's standardized faces requires five terms: *blanco*, *negro*, *trigueño*, *indio*, and *jabao*. Estimated reliability of the model is high (.96).

Figure 3 illustrates the pattern of agreement for the pile sort data, following Handwerker's (2002) method. Handwerker extends the logic of cultural consensus analysis by using a principal components analysis (PCA) of informants (rather than variables) to determine whether interinformant agreement reflects a common, underlying culture. He argues that high informant loadings on the first factor, combined with low loadings on the second, constitute evidence of a single culture. Figure 3 plots first and second factor loadings from a PCA of the 42 pile sort informants. The tight clustering of informants along the right-hand edge of the graph reflects consistently high loadings on the first factor (mean =

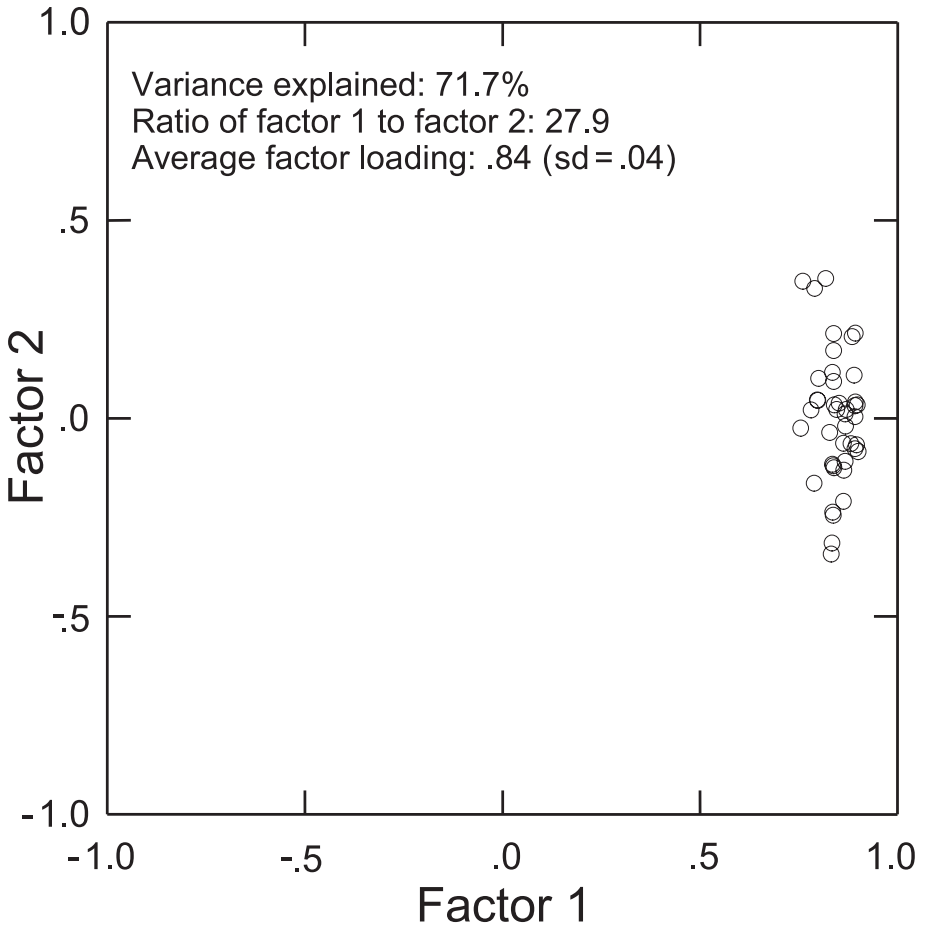


Figure 3. Scatterplot of Loadings on Factor 2 by Loadings on Factor 1; Construct Validity Analysis for Pile Sort Data

.84, S.D. = .04) and low loadings on the second ($< \pm .35$). The first factor explains more than 71% of variance, and its eigenvalue is nearly 28 times larger than that of the second. By Handwerker's (2002) criteria, these results are strong evidence of high interinformant agreement and a single cultural model of *color*.

Discussion and Conclusion

This exploratory study is the first to apply new systematic ethnographic methods to describe the cultural model of *color* in Puerto Rico. It addresses three empirical

questions based on previous work: (1) what are the core emic categories that constitute this model? (2) what is the semantic structure that organizes it? and (3) does the pattern of interinformant agreement justify the assumption that there is a single, coherent cultural model of *color*? The findings confirm key elements of previous research. But they also provide new insights that inform ongoing discussions about ethnicity and racism in Puerto Rico and point to ways that cognitive anthropologists can contribute to the comparative study of ethnic classification across societies.

Free listing and the replication of Harris's identification task independently confirm previous observations regarding the proliferation of terms for designating *color*. However, both elicitation techniques identify a small core of culturally salient categories: *blanco*, *trigueño*, *indio*, *negro*, and *jabao*. The salience of these categories is also evident in the pile sort data, which reveal five major groupings in informants' aggregate perception of Harris's standardized faces. Results from the free lists, identification task, and pile sorts differ from other descriptions of Puerto Rican terms for *color* (e.g., Duany 2002; Godreau 2000) because they were elicited with transparent methods designed to discover the concepts and categories that are meaningful to informants. The results thus provide new information about the contents and boundaries of the cultural model of *color*, without imposing a prior conceptual framework.

This study also confirms previous suggestions that skin color and hair form are the primary dimensions of semantic structure (Duany 2002; Seda Bonilla 1991). Harris's standardized facial portraits are useful in this regard because they vary systematically in five attributes hypothesized to influence *color* categorization in Puerto Rico: skin tone, hair texture, nose shape, lip form, and sex. We can make greater use of this design now than Harris could in his original study. Relatively new analytic methods like multidimensional scaling, correspondence analysis, PROFIT analysis, and multiple regression quadratic assignment procedure allow us to visualize dimensions of semantic structure and to measure the relative importance of various criteria for the ascription of *color*. Using these methods, this study provides more direct evidence of how the cultural model of *color* is organized than was possible in previous studies. Future research could extend this work by using photographs rather than drawings and by including nonphenotypic markers of social status such as occupation, dress, and residence to test the idea that "money whitens" in Puerto Rico (Kay 1978:89).

An important difference between this and previous studies is that it formally tests whether there is a coherent cultural model of *color*. Culture, as most social scientists understand it, is a multidimensional construct that refers to patterns of shared, socially transmitted cognition and behavior (Brumann 1999). Until recently, there was no formal way to assess the validity of this construct, but new developments make it possible to verify the existence and location of cultural boundaries and to justify the assumption of shared culture (Romney et al. 1986; Weller 1987; Handwerker 2002). This study demonstrates a high level of

agreement among informants, which indicates a shared cultural understanding of *color*. Furthermore, formal properties of the cultural consensus model and the theory-driven sampling strategy permit confidence in the findings, even with sample sizes that are small by comparison to standard approaches (Romney et al. 1986). Yet it remains to be determined whether the findings from southeastern Puerto Rico generalize to other parts of the island, including the mountainous interior and the San Juan metropolitan area. Another important extension would be to investigate whether mainland and island Puerto Ricans participate in different cultures of *color* and how these cultures change with the experience of migration and acculturation.

Direct comparisons with previous research in Puerto Rico are difficult because of differences in research setting (e.g., Guayama versus San Juan) and historical confounds related to the growing U.S. political and economic influence on the island over the last half century. Even so, the evidence for a coherent cultural model of *color* is consistent with some prior research. In the 1960s, Seda Bonilla (1991) asked a nationally representative sample of approximately 1,800 people to group 14 black-and-white photographs according to racial similarity. In contrast to others' emphasis on ambiguity and disagreement (e.g., Rogler 1944), Seda Bonilla (1991:184) reported "a high level of consensus." Ginorio and Berry (1972) asked 250 high school students in Puerto Rico to rate 60 color photographs on a scale from "*más blanco*" (whiter) to "*más negro*" (blackier). They found that students rated photographs "with extraordinary consistency" (1972:288).

This study also relates to recent work on the significance of ambiguity in the everyday experience of *color*. For example, Godreau (2000) argues that Puerto Ricans use the "slippery semantics" of *color* for many reasons, including to avoid being victims of racism or to build distance and intimacy in mundane social interaction. Yet Godreau's notion of "slippery semantics" does not imply referential ambiguity in the sense of Harris's classic Brazilian study. Instead, she draws attention to how people manipulate shared understandings of *color* in response to changing social contexts: "There are social norms that guide which criteria are used to establish phenotypic distinctions between *negros* and *trigueños*" in Puerto Rico, even if "these distinctions and norms are complicated by the use of euphemism" (2000:56, my translation). This study complements Godreau's analysis by treating the existence of "social norms" as an empirical matter. By establishing the coherence and structure of these norms, this study enhances Godreau's emphasis on how Puerto Ricans embrace or obscure shared meanings of *color* to meet different ends in everyday social interaction.

My replication of Harris's method invites comparison with his seminal study, which argues that "the most distinctive attribute of the Brazilian 'racial' calculus is its uncertain, indeterminate, and ambiguous output" (1970:1). There are many obvious differences between Brazil in the 1960s and Puerto Rico in 2001, even if earlier scholars argued that race relations in Puerto Rico "offers certain similarities to Brazil" (Hoetink 1967:38). Still, one wonders whether the application of

methods that were unavailable to Harris might yield new insights into the Brazilian “racial calculus.” Byrne and Forline (1997) addressed this question by reanalyzing Harris’s data with methods similar to those used here. Byrne and Forline verified Harris’s finding that there was no single, shared cultural model across the entire sample. However, when they analyzed respondents from different parts of Brazil separately, they discovered evidence of cultural consensus within regional subsamples. Byrne and Forline also estimated the relative salience of skin color, hair type, and facial features in the categorization of Harris’s standardized faces. In contrast to Harris, they find “an orderliness in the dimensions shaping the cognitive domain” (1997:24) and establish the primacy of skin color and hair form as the organizing principles of the domain.

This finding closely parallels Sanjek’s (1971) results. Indeed, Byrne and Forline’s discovery of regional subcultures probably explains why Harris and Sanjek reached different conclusions: Harris sampled from across Brazil, while Sanjek worked in a single locale. Although Sanjek identified a large corpus of terms (116), he found that just ten terms accounted for 85% of all categorizations. Only six terms were used by half or more of Sanjek’s respondents—a striking parallel to the results in Puerto Rico. In addition, Sanjek reported that more than 80% of his informants shared a basic cognitive map of the Brazilian “racial lexicon” (1971:1128) and that there are regular patterns in how children learn to discriminate according to this map. He also speculated that “skin color and hair form are the two basic components which order this domain” (1971:1130), but he lacked analytic methods to measure the amount of interinformant agreement or to test his hypothesis regarding the semantic structure of the domain.

To place this and earlier ethnographic studies in context, it is useful to consider Handwerker’s (2002) distinction between “life experience” and “cultural” data. Life experience data includes personal attributes and events that reflect an individual’s unique life history. Questions such as “What is your race?” and “How old are you?” elicit such information. Cultural data, on the other hand, includes information about the shared meanings that people acquire in social interaction and use to guide and interpret their experience of the world. Cultural data come from questions like “How do you know what race someone belongs to?” or “What changes do people experience as they age?” In other words, life experience data deals with the labels (e.g., race, age) people apply to themselves, while cultural data concerns the shared meaning and definitions associated with those labels.

Recent sociological studies of “race” in Puerto Rico and elsewhere focus on the labels people apply to themselves and others. For example, Landale and Oropresa (2002) study differences in how mainland and island Puerto Rican women identify their race. Telles (2002) examines the concordance between self-identification and observer categorization of race in Brazil. Harris (2002) studies racial identification across different social contexts among adolescents in the United States. These studies of racial identity examine life experience data, yet implicit in the studies is a concern for cultural data—how racial classification

is affected by “shifting racial regimes” (Harris 2002:624), “popular beliefs about race” (Telles 2002:417), or the fact that Puerto Rican “definitions of race are more flexible and ambiguous than is the case in the U.S.” (Landale and Oropesa 2002:234). Ethnographic research on these cultural phenomena thus can help to clarify the meaning and measurement of “race” across disciplines.

One relevant example is the decennial census of Puerto Rico. In 2002, for the first time in 50 years, the census asked Puerto Ricans to identify their “race.” Over 80% self-identified as “white” (United States Bureau of the Census 2001). The meaning of this result is unclear, however, since islanders were asked to choose from official racial and ethnic categories established by the U.S. federal government. Duany (2002:244) recently noted that “no published studies have yet explored the congruence between popular representations of race in Puerto Rico and the official racial categories of the United States.” Preliminary evidence from this study suggests little correspondence between census categories and locally salient distinctions of *color*. An experimental comparison of measures using census categories versus the core categories identified in this study (cf. Byrne et al. 1995; Harris et al. 1993) would better test whether census estimates accurately describe the demographic profile of Puerto Rico.

Finally, this study contributes to the debate about the utility of “race” as an analytic framework in cross-cultural research. Valid cross-cultural comparisons require a distinction between folk concepts and abstract theoretical constructs that transcend the limits of a particular cultural context (Banton 2001:174). Yet comparisons between the United States and Latin American societies are typically framed in terms of *race*, a culture-bound concept that presupposes a set of meanings rooted in the American experience (Smedley 1998). Others have hinted at the incompatibility of *race* with emic constructs in other societies. Nobles (2000:86) points out that “Brazilian censuses have not counted by race as such. The Portuguese word *côr* (“color”) refers to physical appearance, not racial origins.” Seda Bonilla warned that “what North Americans call ‘race’ is not . . . synonymous with what Latin Americans designate with the same name.” (1972:90, my translation). For this reason, Harris et al. (1993:460) use the expression “race-color” to convey the difference between the Brazilian emic concept of *côr* and the North American emic concept of *race*.

Imposing *race* as an analytic framework in societies where it is not a salient emic construct poses problems of measurement and interpretation (Hoetink 1967:34, 51–2; Bourdieu and Wacquant 1999; Seda Bonilla 1972, 1991). Consider Landale and Oropesa’s (2002) study of racial identification among mainland and island Puerto Rican women, which uses two measures of “race”: a closed-ended question based on U.S. federal categories and an open-ended item, “What race do you consider yourself?” Response choices for the closed-ended question—white, black, five Asian groups, American Indian, and other—clearly do not capture locally meaningful distinctions. It is also unlikely that the open-ended question elicits identities that are comparable to “race” in the United States. In Puerto Rico,

the concept of *raza* is closely linked to an ideology of *mestizaje*, or intermixture, that rejects racial differences among Puerto Ricans and emphasizes instead the blending of Spanish, Taino, and African influences into a singular form of Puerto Ricanness: *la raza puertorriqueña* (Dávila 1997). It is not surprising, therefore, that more than half of Landale and Oropresa's respondents identified their *raza* as Puerto Rican. Yet most Puerto Ricans have a heightened awareness of differences in *color*, even if they form a single, unique *raza*. It remains to be determined how the use of more appropriate emic categories may affect our understanding of self-identification and categorization on the island.

A corollary of this point is that *race* should be examined as an emic concept alongside relevant emic constructs in other societies. Mukhopadhyay and Moses (1997:521) make this point in noting anthropologists' blind eye to race: "Nor have efforts to understand indigenous systems of classification (of plants, colors, animals, or kin) been extended and applied to racial and other Euro-American human classificatory principles." Gil-White (1999) likewise notes that social scientists almost uniformly accept Barth's (1969) contention that ethnicity is about ascriptive cognitive boundaries, making the prevailing approach "self-consciously *emic*" (Gil-White 1999:792, emphasis in original). Yet surprisingly little work exists on the emic cognition of ethnic boundaries in the United States or elsewhere. This "glaring methodological gap" (Gil-White 1999:792) creates a need for more studies like this one to take advantage of advances in methods for studying the content and distribution of cultural knowledge.

Notes

1. Harris provided me with the original portraits and encouraged me to produce copies for my use in Puerto Rico. Digital images of the portraits are available at <http://qualquant.net/harris>. Unstructured pretesting established that the drawings tapped a salient cultural domain in Puerto Rico. Key informants spontaneously described the *color* of Harris's faces and frequently commented on the similarity of portraits to friends or family. In one small group, a young woman remarked, "you see a lot of that in the street here." Another confirmed, "Yes, they look a lot like people from around here," and an older man identified a younger version of himself in one of the portraits. All were surprised that the drawings originally were meant to portray Brazilians.

2. In their reanalysis of Harris's (1970) data, Byrne and Forline (1997) aggregated terms by their principal lexemes. My decision to treat modified terms as a separate category (e.g., *blanco* versus *blanco+*) is a more conservative analytic approach that errs on the side of underestimating the coherence of the domain.

3. According to rule-of-thumb guidelines, the stress of .186 is somewhat high, suggesting that the best fit for the data may require more than two dimensions. Plotting the data in three dimensions lowers the stress to .129. However, a recent simulation study (Sturrock and Rocha 2000) suggests that the stress of .186 in two dimensions is acceptably low, given the number of items. We can regard this graph, therefore, as a reasonably good representation of the semantic structure in this domain.

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