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**THE INFLUENCE OF RACIAL IDENTITY AND CULTURAL VALUES ON  
RESPONSES TO BIODATA EMPLOYMENT ITEMS:  
AN INVESTIGATION OF DIFFERENTIAL ITEM FUNCTIONING**

**By**

**David John Whitney**

**A DISSERTATION**

**Submitted to  
Michigan State University  
in partial fulfillment of the requirements  
for the degree of**

**DOCTOR OF PHILOSOPHY**

**Department of Psychology**

**1995**

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## **ABSTRACT**

### **THE INFLUENCE OF RACIAL IDENTITY AND CULTURAL VALUES ON RESPONSES TO BIODATA EMPLOYMENT ITEMS: AN INVESTIGATION OF DIFFERENTIAL ITEM FUNCTIONING**

**By**

**David John Whitney**

**The present study proposed and examined a conceptual model of the influences of racial subgroup differences in responses to biodata employment items. The model suggested that demographic race influences racial identity, which in turn was expected to lead to cultural value preferences. The cultural value typology of Kluckhohn and Strodtbeck (1961) was used as a theoretical framework of cultural values. Differences in preferences for cultural values were hypothesized to lead to differential item functioning on biodata employment items.**

**One hundred eight White and ninety-nine Black college students were used as research participants to examine the hypotheses of the study. Each participant was administered a test battery consisting of 107 biodata items, along with scales assessing random responding, social desirability, cultural values, cognitive ability, racial identity, and demographic information.**

**Results indicate little support for the expectation that racial identity classification would explain additional variance in the adoption of cultural values over that explained by demographic race. The strength of racial identity was found to impact the adoption of several cultural values, however. Mixed results were found for expectations of Black-**

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White preference differences for cultural values. Although Blacks and Whites clearly differed in their relative endorsements of various cultural values, these differences were not always consistent with theory. Some evidence was found supporting the expectation that cultural values and race would impact responses to biodata employment items. Overall, 21% of the biodata items were influenced by differences in cultural values between respondents. Thirty-three percent of the responses to biodata items were influenced by the race of the respondent. Although responses to only 9 items were found to be influenced by both cultural values and race, evidence was found supporting the contention that a priori inspection of biodata employment items for the presence of cultural values can successfully predict items that would be susceptible to racial subgroup response differences.

Although I feel I have  
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presence here. Many thanks  
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My deepest thanks a  
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to this project! I have  
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Although I feel I have learned a great deal over the last 5 years at MSU, I strongly believe my most invaluable lessons have come from the individuals I have shared my time with here. Many thanks are extended to my fellow graduate students (both past and present) -- I strongly believe my graduate education has relied heavily upon my interaction with my fellow "partners in crime". Not to mention the social support needed to get me through this process! A special thanks to those in my cohort-- Dennis Devine, Stan Gully, Jen Hedlund, and Eleanor Smith. I'll never forget our trips to Denny's late at night (more like early in the morning), the tumult we all felt our first year, the occasional camping extravaganza, the celebrations at Chi Chi's, the long gripe sessions which did a world of good, snow football games, lunches at the Break Place (chili, anyone?), singing nonsense out of tune (okay, maybe that's more me than any of you), the shared expectations, Coral Gable's Happy Hour, and of course, the many hours of just plain spending time together. You've all influenced my life immeasurably -- I sure as hell hope it's for the better!

My deepest thanks are extended to Rick DeShon and John Hollenbeck for your encouragement and criticisms throughout my dissertation process. I truly appreciate your help on this project! I have been extremely fortunate during my tenure at MSU to have not only 1 mentor, but 2. I was lucky enough to have them both serve on my dissertation

committee. Mike Lindell and

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This dissertation would never have been completed without Neal's financial support and overnight turnaround on revisions. I don't know how you do it, but I do appreciate it.

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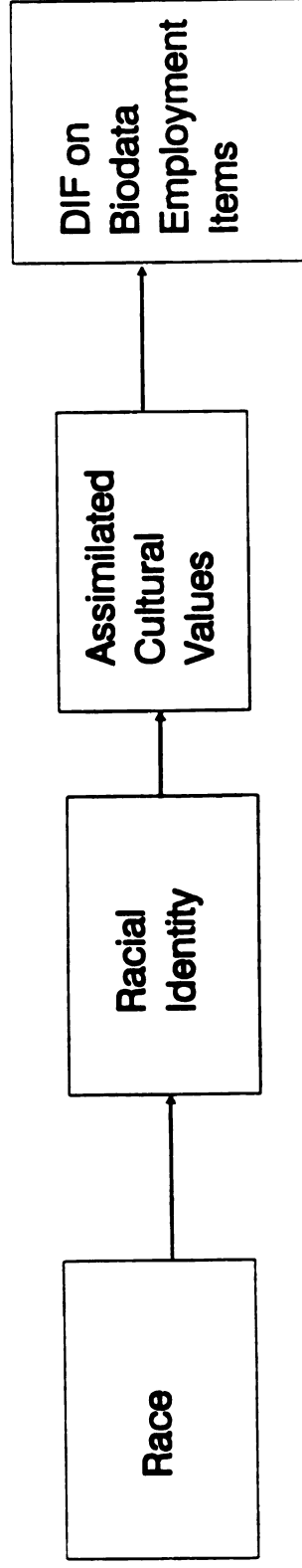
## INTRODUCTION

The search for an unbiased estimate of an individual's performance abilities has long been a mainstay of Industrial/Organizational psychologists. Ethical and legal concerns related to test fairness continue to demand the thoughtful consideration of practitioners and researchers alike. Most of the research in this area has considered differential item performance of disparate racial groups on cognitive ability tests (e.g., Butler-Omololu, Doster, & Lahey, 1984; Freedle & Kostin, 1990; Rudner, Getson, & Knight, 1980; Schmitt, 1988; Schmitt & Dorans, 1990; Stricker, 1982). This literature has produced many suggestions for fair cognitive ability test construction, but few insights into the causes of differential performance on particular test items for selected subgroups. Yet selection test batteries rarely consist solely of cognitive ability tests. Despite the paucity of knowledge concerning factors influencing differential responding on cognitive ability test items, still less is known about the influences of differential responding on subjective test items such as personality, biodata, and situational judgment items. The current study examines differential item functioning of items from tests with subjective responses. Unlike many of the investigations conducted on cognitive ability tests, the present study combines past empirical findings with theoretical speculation to offer several a priori hypotheses concerning characteristics of biodata employment items that are likely to lead to differential item functioning.

Figure 1 presents a model of the proposed research. Initially, a brief review of the item bias literature examining cognitive ability tests is pursued in order to lay the groundwork pertaining to the current status of the field. Theoretical offerings into the causes of differential responding will then be considered. Specifically, the current study proposes to investigate the oft-suggested, but seldom researched, cultural influences on item response inclinations. The proposed study argues that before considering cultural influences, researchers must initially focus their concern on accurately classifying individuals in terms of their cultural heritage. Racial identity is offered as a psychological construct that would be expected to account for greater variance in cultural identification than traditionally utilized physical characteristics such as skin color. The current study proposes that identification of an individual's racial identity should help explain an individual's preference for certain cultural values. The concept of racial identity is explored, and several criticisms of current conceptualizations of the construct are offered. Although the construct of culture also has suffered from conceptual ambiguity, the work of F. Kluckhohn and Strodtbeck (1961) has been useful in establishing several cultural values which are hypothesized to vary across peoples and cultures (e.g., Beutler & Bergan, 1991; Carter, 1990; Chapman, 1981; Inclan, 1985). These cultural values are expected to be consistent with the philosophies and culture associated with a particular racial group. These same values, when reflected in options to biodata employment tests, are proposed to result in differential response patterns for people with disparate racial identities.

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**A Conceptual Model of the Research**



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A note is required to explain the terminology used to identify racial subgroups. Recent psychological literature has been rife with arguments and opposing definitions of the term race (e.g., Dole, 1995; Jensen, 1995; Rushton, 1995; Yee, 1994). A major reason for this controversy is attributable to the fact that the use of the term "race" by psychologists and Americans in general does not correspond to any particular biological entity (Fish, 1995). Given the disparate conceptions of race, how should a well-meaning investigator use and define race for research purposes? The answer to the question is most appropriately determined on a case by case basis. However, given the diverse conceptualizations of race, it is incumbent upon the researcher to provide a clear definition of what one means by the term. The present study borrows Van den Berghe's (1967) definition of social race as its conception of race. According to this view, race is "a group that is socially defined but on the basis of physical criteria" (cf. Lindell & Perry, 1992, p. 140).

For the purposes of this paper racial identity will be defined in terms of Janet Helms' definition. According to Helms (1990), racial identity refers to the "belief systems that evolve in reaction to perceived differential racial-group membership" (p. 4). The terms Asians, Blacks, Hispanics, and Whites are used in the present study to identify racial subgroups formed on the basis of a single-item self-report measure. Alternatively, the terms African-Americans, Asian-Americans, Hispanic-Americans, and White-Americans are used to denote subgroups formed on the basis of the assessment of an individual's self-reported ascribed and reference group racial identity.

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Before a formal examination of the cultural influences on subjective employment test items, it is first necessary to examine the *meanings* of test and item bias.

### **Differential Item Functioning and Cognitive Ability**

In reference to standardized intelligence tests, Thorndike (1927) lamented:

"Just what they measure is not known; how far it is proper to add, subtract, multiply, divide, and compute ratios with the measures obtained is not known; just what the measures obtained signify concerning intellect is not known.

We may refer to these defects in order as ambiguity in content, arbitrariness in units, and ambiguity in significance"(p. 28).

Even in these early days of ability testing, Thorndike was not alone in his criticism.

Reacting to the Army Alpha cognitive ability testing program, Walter Lippmann (1922) stated:

"I hate the impudence of the claim that in fifty minutes you can judge and classify a human being's predestined fitness for life. I hate the pretentiousness of that claim, I hate the abuse of scientific method which it involves. I hate the sense of superiority which it creates, and the sense of inferiority which it imposes" (p. 146).

Although such charges may be levelled against all testing procedures in general, criticisms such as these have spurred research interest into the differential impact of tests on protected groups.

Two parallel but separate lines of research have examined differential performance of selected subgroups (generally Blacks and Hispanics vs. Whites, or

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males vs. females). On the one hand researchers have examined bias in the test as a whole. These investigations, for example, examine whether Blacks score lower on the cognitive ability test (the predictor) than would be indicated by their relative standings on the criterion measure the test was selected to predict. Although several definitions of test bias have been introduced (e.g., Darlington, 1971; Thorndike, 1971; Cole, 1972), Ledvinka (1979) states that the commonly accepted definition is attributable to Cleary. Cleary (1968) states that:

"A test is biased for members of a subgroup population if, in the prediction of a criterion for which the test was designed, consistent non-zero errors of prediction are made for members of the subgroup. In other words, the test is biased if the criterion score predicted from the common regression line is consistently too high or too low for members of the subgroup" (p. 115).

A second research approach has been the investigation of possible item bias. The presumption of item bias investigations has been that there are some identifiable cultural influences contained in the items which lead to differential responding by members of different cultural subgroups. Once this content has been identified, the biased items would presumably be removed from the test in an effort toward increasing test fairness. Perhaps the earliest of such investigations was conducted by Eells, Davis, Havighurst, Herrick, & Taylor (1951) who attempted to determine what type of test items were most advantageous to children of high socioeconomic status (SES), as well as those items on which children of low SES performed well. Only

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within the last decade, however, have such item bias investigations become commonplace (Tatsuoka, Linn, Tatsuoka, & Yamamoto, 1988).

Angoff (1993) indicates that as use of the phrase *item bias* flourished, a semantic conflict developed between statistical and social uses of the term. The generally accepted statistical definition of bias has argued that an item is biased if equally able (or proficient) individuals, from different groups, do not have equal probabilities of answering the item correctly (Angoff, 1993). Other authors simultaneously provided a social component to this definition. Shepard, Camilli, and Averill (1981), for example, append the phrase "a kind of invalidity that harms one group more than another." This second definition obviously requires a judgment of some kind which extends beyond the straightforward statistical illustration of differential performance. This dual use of the term *bias* led to confusion over what exactly was meant by item bias. In order to assuage some of this confusion, the term *differential item functioning* (or, DIF) emerged to refer solely to the statistical definition of item bias.

### *Differential Item Functioning Methodology*

Angoff (1993) provides an overview of the development of modern differential item functioning methods, part of which is summarized here. Despite early efforts by Cardall and Coffman (1964) and Cleary and Hilton (1968) to employ the use of an analysis of variance methodology to investigate differential performance of test items, these methods failed to catch the attention of subsequent researchers. Based in part on Thurstone's (1925) absolute scaling techniques, Angoff (1972) offered a method

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referred to as delta-plot or transformed item-difficulty (TID). The TID method requires the calculation of item  $p$ -values for each subgroup of interest, and for the subsequent conversion of each  $p$ -value to a normal deviate. These pairs of normal deviates are then plotted on a bivariate graph, with the two groups represented on the axes. After plotting each of the pairs of normal deviates, the resulting ellipse indicates whether bias is a problem. An item by group interaction is detected whenever a particular item falls some distance from the plot of points. Despite its straightforward interpretation and simple logic, this method has been criticized for failing to consider the discriminating power of each item on the test, which may lead to a failure to detect truly biased items (e.g., Cole and Moss, 1989; Shepard, 1981). Further, items which are classified as biased may only appear to be so, due to differences in their discrimination.

The method which has become the standard in the detection of DIF readily accounts for differences in discrimination. This method, the item response theory (IRT) model, was originally explicated by Lord (1952) and Lord and Novick (1968). According to item response theory, the performance of an examinee on a specific test item can be predicted by a set of latent trait variables. Further, the relationship between the set of traits underlying item performance and the test performance of examinees can be described by an item characteristic curve (ICC) (Hambleton, Swaminathan, & Rogers, 1991). The ICC is an S-shaped curve of the proportion of individuals at the same ability level who answer the given item correctly. Assuming the test items are unidimensional and the item measures the same ability, an identical

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curve would be expected to be found for all samples, regardless of the subgroups composing the samples. If two groups produce different item response curves for a given item, there exists evidence that the above assumptions have been violated.

An ICC is a mathematical function which considers the relationship between the probability of success on an item, the ability measured by the test, and the characteristics of the item (Hambleton, Swaminathan, & Rogers, 1991). The item characteristic curve can be composed of one to three parameters. The one parameter model (often referred to as the Rasch model) is the most simplistic of the item response models since it considers only a single parameter: the difficulty of the item. The one parameter IRT model can be represented mathematically as:

$$P_i(\theta) = \frac{e^{(\theta-b_i)}}{1 + e^{(\theta-b_i)}}$$

$$i = 1, 2, \dots, n$$

where,

$P_i(\theta)$  is the probability that a randomly chosen examinee with ability  $\theta$  will answer item  $i$  correctly.

$b_i$  is the difficulty parameter of item  $i$

$n$  is the number of test items, and

$e$  is the natural logarithm, 2.718

The larger the value of  $b_i$ , the greater the difficulty of the item. This model is of limited usefulness in the investigation of DIF because it assumes that all items are

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equally discriminating (similar to the TID model above) and that items cannot be answered correctly by guessing -- an unlikely assumption in multiple choice tests. Indeed, Shepard (1981) found a correlation of .99 between the DIF indices of TID and Rasch one-parameter model. Since both models are similarly derived, the criticisms provided to TID apply directly to the Rasch model as well.

The two parameter model is more satisfactory than the one parameter because it also includes a discrimination index, but the most complete IRT model is the three parameter model, which also adds an index for guessing. The discrimination parameter, denoted  $a_i$ , is proportional to the slope of the ICC at the point  $b_i$  on the ability scale. Thus, items with steeper slopes are more useful for drawing distinctions between individuals at disparate ability levels. The final parameter is referred to by Hambleton, Swaminathan, & Rogers (1991) as the pseudo-chance parameter, and is denoted  $c_i$ . This parameter represents the probability that examinees of low ability will answer the item correctly. This value is often lower than the chance probability of guessing the item correct, as many examinees of low ability will be attracted to incorrect response options. The three parameter IRT model can be represented mathematically as:

where

$P_{ij}$  is the probability

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$$P_i(\theta) = c_i + (1 - c_i) \frac{e^{Da_i(\theta - b_i)}}{1 + e^{Da_i(\theta - b_i)}}$$

$$i = 1, 2, \dots, n$$

where,

$P_i(\theta)$  is the probability that a randomly chosen examinee with ability  $\theta$  will answer item  $i$  correctly.

$a_i$  is the discrimination parameter of item  $i$

$b_i$  is the difficulty parameter of item  $i$

$c_i$  is the pseudo-chance parameter

$D$  is a scaling factor introduced to make the logistic function as close as possible to the normal ogive function

$n$  is the number of test items, and

$e$  is the natural logarithm, 2.718

Another technique capable of identifying DIF was originally proposed by Holland and Thayer (1988), and is based upon the work of Mantel and Haenszel (1959). The Mantel-Haenszel technique requires the formation of a 2x2 table developed by examining the frequencies of the correct vs. incorrect item responses, and the two subgroups the researcher wishes to compare, matched on ability. The Mantel-Haenszel index is calculated for each ability level. This index is the ratio of

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odds that one subgroup answered the item correctly to the odds that the second subgroup answered the item correctly. Thus, when there is no difference in subgroup performance on the item, the Mantel-Haenszel index is 1. Across all matched categories a common odds ratio ( $\hat{\alpha}_{MH}$ ) is then produced, which determines the average factor by which the odds that a member of one group responds correctly to the item exceed the odds that a member of the second group responds correctly to the item. Additionally, this common odds ratio is sometimes then transformed to center the index about the value of zero. Although the Mantel-Haenszel technique can provide estimates of differential item difficulty, it does not provide estimates of differential item discrimination (as IRT does). Therefore, Angoff (1993) and Dorans and Kulick (1986) suggest that the use of Mantel-Haenszel techniques be accompanied by a plot of the Mantel-Haenszel indices by score interval.

Both the Mantel-Haenszel and the IRT approaches to the detection of DIF examine differential responses to the correct option of the item. Examining only the correct choices for DIF would initially make sense, since it is only these options which directly affect test scores. However, recent work has begun to examine each of the distractors of an item (e.g., Dorans, Schmitt, & Bleistein, 1992; Green, Crone, & Folk, 1989; Veale & Foreman, 1983). The reasoning behind this comprehensive differential item functioning (CDIF), or alternatively, differential distractor functioning (DDF), is that if two subgroups respond differentially to a distractor, this could lead more members of one subgroup to get the item incorrect. Investigation of differential distractor functioning has the further advantage of increasing the

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probability of finding differential response patterns over DIF. This is true simply because, by examining each of the distractors instead of just the single correct item, DDF will increase the number of options examined fourfold in a test with items composed of four distractors each. Green, Crone, & Folk (1989), for example, examined DDF by employing a methodology which used a three-way contingency table of option chosen by subgroup by ability level. A main effect for option choice corresponds to the differences in popularity of the various options. The interaction of item choice by ability levels identifies the extent to which test-takers of differing abilities are attracted to the various options of the item. The interaction of greatest interest is the interaction between option choice and subgroup, which assesses whether test-takers of different subgroups choose the various options more or less frequently than would be expected based upon their ability estimates. Green, Crone, & Folk (1989) indicate that differential distractor functioning is found only when the option choice by ability interaction explains additional variance beyond that attributed to the main effects or other interactions.

*Differential Item Functioning: Findings*

Research examining differential responding generally employs one of the methodologies described above. Examinees are initially grouped based on some characteristic of interest to the researcher such as race or gender. Comparisons are made between groups by controlling for ability, as determined by the total test score. These studies, then, are hoping to uncover the relative strengths and weaknesses of one group over another, much like ipsative tests. This information regarding the

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influences on differential responding could then be utilized by future test makers.

Since DIF researchers often operate under the presumption that differential responding is due to some sort of cultural influence, much of the current DIF research examines SAT and GRE verbal items, which would presumably contain more culture-specific influences than mathematical items. Although much of this research has produced conflicting findings, there are some trends in this research. The major findings of the research examining the factors which influence differential responding are outlined below.

Researchers have consistently found evidence of differential speededness (e.g., Dorans, Schmitt, & Bleistein, 1992; Schmitt & Bleistein, 1987; Schmitt & Dorans, 1990). Differential speededness refers to divergent response rates between members of two ability-matched groups to items appearing at the end of separately timed sections of a test. The research indicates that when differential speededness occurs, Whites generally reach the final items on the test more often than their ability-matched counterparts from other ethnic groups. Dorans, Schmitt, and Bleistein (1992), for example, compared the rate at which Asians, Blacks, Whites, and Hispanics failed to reach items on two verbal sections of an SAT. Although no differential speededness was found between Whites and Asians, both Blacks and Hispanics at a given ability level tended to answer fewer items than Whites. Dorans et al. (1992) suggest that these findings may be due in part to differential strategy use by diverse races. They speculate that Whites may more readily skip over difficult

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items than members of other ethnic groups, allowing White examinees to reach more of the items in a timed section of the exam.

In an attempt to uncover sources of differential responding, Schmitt (1988) hypothesized that Hispanics and Whites would respond differentially to verbal items containing one of several characteristics: (1) cognates (2) false cognates (3) homographs, and (4) content of special interest. Specifically, Schmitt (1988) argued that Hispanics would outperform a group of Whites matched on ability when the correct response for the SAT verbal item contained a word with a common root in English and in Spanish. However, the presentation of an item containing a word which has different meanings in the two languages (a false cognate) was expected to impede the performance of Hispanics. English words which have multiple meanings but a single spelling (homographs -- ex. bark) were similarly expected to impede Hispanic performance. Finally, verbal passages which were relevant to the Hispanic population (such as a passage about Mexican-American women) were expected to favor Hispanic performance. Limited support was found for several of these hypotheses. Although Hispanics did tend to outperform Whites in items containing true cognates, this finding was not consistent across all items. Hispanics outperformed Whites on reading passages of special interest to Hispanics. However, this effect was found only when the passages were specifically targeted toward this group. Limited use of false cognates and homographs in the test disallowed examination of hypotheses involving those variables. Schmitt (1988) argues that

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future research would benefit from the construction of an experimental form of the test in which the hypothesized factors could be controlled.

Schmitt and Dorans (1990) continued the investigation of the DIF of SAT verbal items. These researchers synthesized the major findings of several unpublished ETS studies that compared the responses of Hispanics, Blacks and Asians to Whites. Items were coded by the authors as being of special interest, of possible interest, no particular interest. Results indicated a positive relationship between content of interest and DIF for Hispanics and Blacks. The effect of homographs on DIF was investigated by coding the presence of homographs in all stems, key and distractors, and then correlating this with the standardized DIF values. Results clearly indicate that items which contain homographs are harder for each of the racial minority groups examined than these items were for the sample composed of Whites. Finally, Schmitt and Dorans examined the possible influence of vertical relationships on item response patterns. Vertical relationships were defined as those items in which a word or words in the stem could be associated with a word in the key or any distractor which is independent of the analogical relationship between the two words in the stem. As an example, Schmitt and Dorans (1990) provide the following:

- |                       |                        |
|-----------------------|------------------------|
| PHYSICIAN: PATIENT :: | (A) nurse: hospital    |
| (B) guard: warden     | (C) informer: agent    |
| (D) attorney: lawyer  | (E) accountant: client |

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The correct answer is option (E) since both option (E) and the stem represent a relationship between *subject and recipient*. However, option (A) represents a vertical relationship, since both the stem and option (A) are associated with medical terms.

Schmitt and Dorans (1990) hypothesized that vertical relationships between words in a stem and words in a non-key distractor would cause negative DIF for Hispanics, Blacks, and Asians. However, positive DIF was expected when the vertical relationship was found between the stem and the keyed option. Although only Hispanics were found to benefit from vertical relationships between the stem and correct option, all three racial minority groups performed more poorly on items with vertical relationships between stem and incorrect options than did White test takers.

Schmitt and Dorans (1990) further examined the ETS research for specific findings pertaining to ethnic groups. Differential item functioning seemed most prevalent between Asian Americans and Whites only when the sample was composed of Asians with poor English language skills. Whereas negative DIF was commonly found for non-native English speaking Asians on SAT verbal items and math items containing a large degree of verbal material, very little DIF was found for Asians with English as their best language. In relation to Hispanic populations, Schmitt and Dorans (1990) uncovered no new evidence of differential responses beyond those of Schmitt (1988) discussed above. Research examining the DIF of Blacks on the SAT has found that the greatest amount of differential responding occurs on analogy items (Rogers & Kulick, 1987; Scheuneman, 1978). The Schmitt and Dorans (1990) review

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of ETS research indicates that Black examinees often experienced greater difficulty with SAT verbal items containing vertical relationships and homographs.

The effect of item difficulty on the differential item functioning of verbal items on the SAT and Graduate Record Examination (GRE) for Blacks was investigated by Freedle and Kostin (1990). These researchers surprisingly found that on both tests, Blacks performed better on harder verbal items with little context (analogies and antonyms) than their ability-matched White counterparts, and performed worse on easier items which were relatively context free. Very little DIF was found when examining item difficulty for sentence completion and reading comprehension items on the GRE. Freedle and Kostin (1990) used one unpublished ETS study as support for the hypothesis that Blacks and Whites use different strategies to answer difficult items. Freedle, Kostin, and Schwartz (1987) instructed students to use a verbal protocol procedure when presented with SAT-type analogies. Blacks were found more often than Whites to employ the use of a strategy referred to as indirect induction -- that is, Blacks were more likely to employ a reasoning method which suggested a partial grasp of the word meanings in the analogy stem, which can then subsequently be used to limit the available options from which the ultimate choice is made. Further analyses by Freedle, Kostin, and Schwartz (1987) demonstrated that use of an indirect induction strategy could increase the chances of accurately responding to a difficult item by as much as 80 percent. Alternative explanations provided by Freedle and Kostin (1990) concerning their finding that Blacks were more likely to respond correctly to more difficult GRE verbal items than their ability-

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Further support for the possibility that DIF may result from disparate solution strategies is provided by Tatsuoka, Linn, Tatsuoka, and Yamamoto (1988). Over 500 junior high students were instructed to solve fraction subtraction problems in one of two ways. Following instruction, students in both groups were administered a 40-item fraction subtraction exam. This test was composed of six separate types of items (e.g., subtract 2 fractions with the same denominator; mixed number subtraction where the test taker needs to find a common denominator; mixed number subtraction with the same denominator; etc.). Of these six types of items, it was hypothesized that two item types would favor neither instruction method, and two types of items would favor each of the two instruction methods. Initial results demonstrated no DIF between the two instructional methods. Speculating that the students in the two groups may actually be utilizing a method they were not specifically taught, further analyses examined DIF resulting from actual solution methodology employed by the student. These analyses found that strategy used differentially affected which items the student responded to correctly. The authors argue that further investigation of DIF should examine some cognitive process variables, rather than examine DIF based upon simple demographic variables which would be expected to have largely unknown relationships to more relevant instructional and cognitive variables.

Scheuneman and Gerritz (1990) employed the use of Mantel-Haenszel techniques to examine DIF in reading comprehension items. However, these

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researchers not only examined differential responding between Blacks and Whites, but also between men and women. These researchers carefully identified components of reading passages from nearly 300 items from six forms each of the SAT and GRE. These potentially DIF-inducing components included: (1) passage content, (2) characteristics of the question posed in the stem (e.g., transformation of information; induction/deduction; passage-based inferences; rhetorical inferences; or, reasoning), (3) structure of the options (e.g., complete sentences and stand-alone phrases; simple phrases; short lists of 1-4 words; or, numbers), and finally, (4) semantic context of the text (e.g., predicates; arguments; or, modifiers). Following the calculation of Mantel-Haenszel indices, regression was utilized to examine which variables contributed to the prediction of DIF. Content of the passages was found to explain more than 25% of the variance in the Mantel-Haenszel values for both the gender and the race comparisons. For race, analyses revealed inconsistent results across the two tests. On the SAT, narrative or scientific passage content favored Whites. When the stem demanded the use of rhetorical inferences or reasoning ability, Whites again performed better than a matched group of Black examinees. Finally, White examinees were slightly more likely to respond correctly to SAT reading comprehension items when the options were in the form of a sentence. Blacks performed better on items with word options and passages of greater length. The analysis of the GRE items revealed only limited overlap with the SAT findings. White examinees once again performed better on passages with scientific content. Other GRE item characteristics which favored White performance required the use of

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### *Summary*

The research examining differential responding has provided some indication as to the factors which influence disparity in item response patterns. These factors include specific characteristics of the item stem, of the options used, as well as of the type of processing or inferences the examinee is expected to perform. Further, research has suggested that some of these differences in propensity to respond may be attributable to differences in solution strategies used by the groups of interest. However, both within and across studies the findings of DIF are often inconsistent and ambiguous. The lack of clear-cut and consistent findings in the causes of differential responding to cognitive ability items has been lamented by many researchers (e.g., Cole, 1981; Scheuneman & Gerritz, 1990; Tatsuoka, Linn, Tatsuoka, & Yamamoto, 1988). Tatsuoka et al. (1988) argue convincingly that all too often researchers examining differential responding have relied too heavily upon the use of demographics (e.g., self-reported race or sex) as the determinant of group membership. This emphasis on research examining racial and gender characteristics, however, is no doubt a reflection of societal concerns for fairness in testing.

Although there is an underlying belief that background experiences may influence members of different races to respond differentially, it is the cognitive strategies actually employed by the examinees which are of greater theoretical interest to psychologists. Scheuneman and Gerritz (1990) provide evidence that the use of

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different solution strategies may lead to differential item response. Despite evidence provided by Freedle and Kostin (1990) and Dorans, Schmitt, & Bleistein (1992) suggesting that different solution strategies may be employed by members of different races, further investigation is necessary to examine *why* members of different races employ different solution strategies. Specifically, little is known about the way in which the solution strategies employed by examinees are influenced by their cultural background. Perhaps then, the greatest benefit would be provided by research which examines the relationships between demographics, cognitive-psychological variables, and subsequent response patterns on assessment tests.

### **Subjective Employment Tests**

The vast majority of research examining DIF has scrutinized the differential response rates of selected groups on cognitive performance. Cognitive ability tests are a logical starting point for the examination of item bias. Each year, thousands of students' scores on such standardized cognitive ability tests as the SAT and GRE are used to determine their fate for future educational opportunities. Cognitive ability testing is used for much more than just aiding the college admission process, however. Cognitive ability tests are one of the most popular employment selection tests in use today. The popularity of cognitive ability tests is attested to by the fact that there exist a multitude of meta-analyses examining the validity of these tests across a variety of employment contexts (e.g. Schmidt, Pearlman & Hunter, 1980; Schmidt, Hunter, & Caplan, 1981; Schmitt, Gooding, Noe, & Kirsch, 1984). These studies have demonstrated that the popularity of cognitive ability is well-deserved,

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with population validity coefficients *across all jobs* of .54 with a training success criterion, and .45 with a job proficiency criterion (Hunter & Hunter, 1984). Using more conservative analytic assumptions for the correction of restriction in range, Hartigan and Wigdor (1989) report validity coefficients in the .2 to .4 range with a criterion of supervisory ratings for the General Aptitude Test Battery (GATB). Even so, few would doubt the impressive validities of cognitive ability tests. In comparison to other commonly used predictors such as interviews, job samples, and personality tests, cognitive ability tests have often been shown to have equal or better validities across jobs (Hunter & Hunter, 1984).

Despite the well-deserved popularity of cognitive ability testing, these tests are only one option available to human resource managers in their examination of applicant aptitude. Assuming, for example, that a cognitive ability test correlates .4 with job performance, over 84% of the variance in job performance remains unexplained. Thus, additional selection tests are used to help account for the remaining variance in job performance. Interviews, work samples, assessment centers, biodata, situational judgment inventories, and personality tests are all possible methods of validly assessing an applicant's potential to the organization. Whereas the former three test types in the above list require assessment of individuals or small groups, the latter three are commonly used paper and pencil tests which can be administered to large groups with relative ease. Although each of these tests require a subjective response on the part of the candidate, can be administered in a multiple choice format, and are assigned "correct" option keys, there are subtle

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Some scientists have challenged the validities of these tests based on their potential for fakability. In particular, research has examined the degree to which applicants are likely to fake responses on biodata inventories. Mumford and Owens (1987) point out that the research has demonstrated that although self-report bias may produce response shifts, this bias is not sufficient to change the ordering of individuals. Further, these authors argue that social desirability and acquiescence seem to have only minimal impact upon biodata measures. The susceptibility of these scales to outright faking has also been thoroughly examined. There seems to be some

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consensus that although it is possible to fake responses to these tests, applicants rarely do so, especially when instructed that such deception can be detected (Cascio, 1975).

Despite the popularity of personality, biodata, and situational judgment tests, there has been no examination of the potential for item bias in these tests. The lack of research examining potential DIF on these subjective tests is unfortunate, especially considering the differences between these tests and the more heavily investigated cognitive ability tests. Biodata, personality and situational judgment scales require the examinee to subjectively select an option for each item based on their preferences, personal background, or inclinations. That is, there is no objective standard by which one option can be said to be "better" than another. Rather, the correct option is either empirically or rationally keyed. In the case of empirical keying of an item, the correct options are determined based upon their ability to discriminate the examinees based on some criterion of interest (such as supervisory ratings, promotion rate, turnover rate, etc). In the rational scoring approach, items are developed and keyed to assess behavioral dimensions believed to be essential to adequate job performance. In either case, any particular item may have a single correct option, multiple correct options, or be weighted such that some items are viewed as "more correct" than others. These characteristics of personality, biodata, and situational judgment items are clearly different from cognitive ability tests, in which each item is designed to have only one correct option. Further, it is clear from the definitions of these types of tests that personal characteristics of the individual examinee are more likely to have an impact on item responses to subjective tests than on cognitive ability tests. To the extent that

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An examination of the potential for differential item functioning in subjective employment tests appears long overdue. However, the testing of a priori hypotheses regarding item bias is highly dependent upon accurate assessment of the ways in which individuals differ from one another. That is, the search for differential item functioning requires the selection of theoretically meaningful and psychometrically defensible on which individuals may be differentiated. In contrast to the routine use of race and sex as the measures of individual variation, the following section proposes that racial identity might serve as a more useful classification variable for the examination of differential item functioning.

### **Racial Identity Theory**

Researchers wishing to examine differences between certain groups of people must at some point choose a criterion on which to categorize those individuals. Thoughtful consideration of the proper criterion has strongly been urged whenever research is conducted (Astin, 1964; Nagle, 1953; Stuit & Wilson, 1946). In the field of testing, researchers have relied almost exclusively upon self-reported and/or observable demographic features as the criterion for dividing individuals into groups of interest. Thus, individuals are classified based upon their skin color, sex, socio-economic status, or educational attainment. The choices of race and sex, in particular, are undoubtedly influenced by legal and social concerns in testing. Ever since the passage of the 1964 Civil Rights Act which prohibited hiring decisions based on race,

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sex, religion, or national origin, these easily reported demographic variables have become the primary focus of researchers examining test and item bias. However, the blind use of such "observable" criteria may be unwarranted. As Helms (1992) accurately points out, researchers examining differential test performance between Black and Whites rarely consider the particular biological characteristics presumed to influence test scores. Rather, race is used as a proxy for some undetermined composite of biological, cultural and educational differences, which are presumed to influence subsequent test scores.

Helms (1992) argues that the use of such observable criteria as skin color as a proxy for other presumed criteria disregards the fact that there exists considerable heterogeneity within racial characteristics. Indeed, she persuasively argues that many complications arise in determining subgroup assignment based on self-report or observable demographic categories due to the prevalence of interracial heritage and variability in skin colors and cultural identifications. Yee (1983) utilizes personal and historical examples to demonstrate how demographic race classifications can be misused. As an Asian-American Yee checked "colored" when registering to vote in his new Southern township in 1964. The public registrant examined the voter registration, quickly erased Yee's response, and substituted white. Heatedly, the man said, "Y'all's not colored, don't you know that? Y'all's white!". This reaction was unexpected for Yee and his wife, who had recently moved from California, where Asians were openly discriminated against. Further confusion over the status of Asian Americans can be demonstrated by an 1854 Supreme Court of California case which

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decided whether the testimony of an Asian American was sufficiently valid to uphold a murder conviction for a white defendant. The Court reasoned that this country was originally founded by Columbus on his voyage to the West Indies, and the natives here were mistakenly termed Indians. Rationalizing that the world was composed of only three types of peoples -- Whites, Blacks, and Indians -- the Court classified Asians as Indians. Further, since Indians had no legal rights, the testimony of the Asian (who was now classified as Indian) was thrown out, and the conviction overturned. Even today in America, individuals need only have 1/16 African ancestry to be classified as Black (McRoy & Zurcher, 1983). Further evidence that race is not always a "scientific" classification is found in the classifications used until very recently in South Africa. Here, many inconsistencies abound as to classification of individuals as Whites, Blacks and Coloreds. Japanese, for example, were considered White, whereas all other Asians were classified as Colored. Finally, the memorable scene in the film Europa Europa in which the (unbeknownst) Jewish protagonist is used to demonstrate the fine features exemplary of Nordic youth, bears witness to the fact that physical features are unreliable sources of scientific inquiry. These arguments suggest that, despite established research methodology, over-reliance upon self-report or observable demographic characteristics may be too simplistic and inaccurate as a criterion for classifying individuals for DIF analyses. These arguments echo the urgings of Tatsuoka et al. (1988), who recommended the classification of individuals based upon some theoretically reasonable criterion (such as cognitive strategies) rather than simple demographics. Further, a similar argument

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was made by Novick and Ellis (1977), who argued that classifications based on ethnic group membership are merely surrogates for some educational disadvantages which should be used as the basis of group formation.

The challenge, then, would be to develop a theoretically meaningful criterion which would allow individuals to be classified into psychometrically defensible subgroups. In abandoning demographic variables, researchers would be encouraged to embrace either biological or psychological variables. Possible biological determinants of race would require the use of measurable biological characteristics. For example, the amount of melanin in the skin might be measured and correlated with selection test performance, although Helms (1988) indicates that the few studies which have attempted to assess the relationship between cognitive performance and objectively measured race-related biological characteristics have failed to find any significant differences. It is perhaps important to note that such studies examined test bias, not DIF. Alternatively, the relationship between item responding and psychological characteristics of individuals could be investigated. Psychological characteristics seem a likely choice as a criterion for DIF considering the prevailing underlying assumption of some as yet unspecified cultural influence on differential response patterns. These psychological variables may possibly mediate the relationship between demographic variables and test performance. Psychological variables have the further advantage of being readily measurable, given reliable and valid scales, and willing subjects.

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The major problem with the use of psychological variables as the basis for sub-group determination for DIF analyses is that these sub-groups may fail to be useful from a societal standpoint. That is, much of the research energy invested in examining DIF and test bias has been conducted solely to satisfy societal concerns with test fairness across specific racial or gender groups. Any psychological variables which are to supplant the use of demographics, therefore, must at least to some degree retain the societal concern with race and sex issues. Ideally, the psychological variable(s) chosen as the criterion for forming sub-groups would provide considerable overlap with the demographic classifications, but provide greater accuracy and flexibility in allowing for individual differences.

To examine the psychological impact of race, researchers could examine racial identity. Identity refers to a sense of group or collective belonging based on one's perception that he or she shares commonalities with a particular group. Identity, then, could serve as a measurable psychological attribute which would provide greater theoretical understanding of the underlying cognitive processes of an individual than would classification based on simple demographics.

Could the psychological variable of racial identity provide researchers with additional information beyond categorization based on mere demographic characteristics? If so, some individuals of a particular demographic classification (e.g., Asian, Black, Hispanic, or White) would be expected to adopt a racial identity inconsistent with their demographic race. A White individual, for example, might adopt an African-American racial identity. Is this possible? Some racial minorities

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living in America may be expected to adopt the racial identity of the dominant White racial group. In a recent study assessing the preference of Black preschool children for Blacks and Whites, Spencer (1984) found evidence consistent with earlier studies (e.g., Clark & Clark, 1939; Williams & Roberson, 1967) which demonstrated that very young Blacks actually preferred Whites to members of their own race. Would it be possible for Whites to similarly identify racially with minority groups? Recently, there has been some press detailing White individuals who have assumed African American racial identities. A recent *Esquire* article profiled several White youth from Fort Wayne, Indiana whose apparent identification with African American culture had led to a complete upheaval in this small midwest town (Carroll, 1994). These so-called "Wiggers" (a contraction of the racially motivated slur "white nigger") had received a series of harassments from townspeople including death and bomb threats, prompting investigations by the FBI and denunciations by the NAACP. Obviously, then, both majority and minority group members can potentially assume racial identities which are not consistent with societal expectations based on demographic characteristics.

The current study proposes that subgroup classification for the investigation of DIF should be based on the psychologically-oriented racial identity of an individual, rather than the individual's biologically determined racial characteristics. Following an investigation of the meaningfulness of the construct of racial identity, it will be proposed that racial identity influences one's exposure to, and subsequent internalization of, cultural values.

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*Racial Identity: Toward a Meaningful Construct*

The theoretical development of the construct of racial identity has been primarily championed by Janet Helms and her colleagues (e.g., Carter & Helms, 1987; Helms, 1984; Parham & Helms, 1981). According to Helms (1990), racial identity theory (RIT) is concerned with the psychological implications of racial-group membership. Specifically, RIT examines the "belief systems that evolve in reaction to perceived differential racial-group membership" (p. 4). By definition, therefore, racial identity is a psychological variable originating from one's racial-group membership. An attempt is made by racial identity theorists to consider three forms of identity: personal, reference group, and ascribed. Personal identity refers to generic personality beliefs about oneself. These characteristics need not necessarily pertain to racial beliefs. Reference group identity refers to the extent to which the individual adopts a particular racial group to guide one's thoughts, feelings, and behaviors. According to Helms (1990), one's reference-group identity is reflected by examining one's organizational memberships, ideologies, and entertainment choices. Ascribed identity refers to the individual's stated racial affiliation and commitment. These components of the racial identity construct are reminiscent of Gross, Mason, & McEachern's (1958) view of achieved, ascribed, and assumed roles.

Unfortunately, the racial identity theories which are present in the literature today are not particularly useful for classifying individuals into separate racial identity groups. Rather, these scales were primarily developed to assist clinical psychologists better understand the racial issues presented by their clients. Separate

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measurement scales are administered to individuals -- presumably based upon their demographically-determined race -- in order to determine the stage of racial development they have achieved. Nigrescence theory attempts to explain the racial identity development of Blacks, while Whites are thought to progress through a completely distinct series of racial development stages. These current stage theories for Blacks and Whites have numerous conceptual and methodological shortcomings. Further, racial identity theories are conspicuously absent for individuals who are neither Black nor White.

In order to utilize racial identity as a criterion for subgroup formation, the present research requires the assessment of racial identity in terms of reference group and ascribed identity. Although Helms and her colleagues have worked extremely hard on developing scales useful for assessing stages of White- and African-American racial development for clinical purposes, I believe these scales are less useful for general classification purposes of an individual of any race into general categories.

To test the hypotheses proposed in this research, a new scale of racial identity was developed which (1) allows the classification of individuals into one of several possible racial identification categories (i.e., African-American, Asian-American, Hispanic-American, White-American, etc.), and (2) directly assesses both reference group and ascribed components of racial identity to provide some measure of the strength of the individual's racial identification. This two component scale is provided in Appendix A. This scale was created by the present author in order to classify individuals in terms of psychological racial identity, instead of traditional

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classification according to observable physical features of the individual. As opposed to traditional demographic classification strategies, the proposed approach to racial classification is likely to be influenced not only by observable characteristics, but also be sensitive to individual differences in cultural and education backgrounds. Since an individual's past experiences are thought to influence not only the development of racial identity but also one's adoption of a specific culture, this new classification approach was an attempt to provide a psychological variable which was thought to mediate the relationship between race and suspected cultural influences on item responses. It is the investigation of possible cultural influences on item responding to which we now turn.

### **Cultural Influences**

Much of the work examining differential response patterns has been atheoretical. Indeed, this research usually assumes one of two forms. The first approach is a purely statistical approach which typically compares the use of two or more techniques for the identification of DIF. The second approach is more concerned with identifying factors influencing DIF. However, even the second group of researchers have not been overly concerned with theory. That is, these researchers typically obtain a database of SAT or GRE items and statistically examine the differences in item responding between selected groups. Once these items have been identified, items are scrutinized in the hope of determining similarities across flagged items. The assumption underlying most of the work on differential item responding is that various groups respond differentially due to disparate cultural experiences and

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influences. Freedle and Kostin (1990), for example, attribute their findings of differential response patterns between Blacks and Whites on cognitive ability verbal items to cultural differences in "nuances of meaning to frequently used words, which presumably reflects varying everyday experiences among cultures" (p. 341).

Scheuneman and Gerritz (1990) provide further speculation that life experiences are responsible for DIF across racial groups. Scheuneman and Gerritz (1990) state, "results concerning the content of reading passages suggest those differences in prior learning, experience, and interest patterns between . . . Black and White examinees may be linked with DIF and deserve further study." Why has such subsequent investigation not been conducted? Perhaps the primary reason is the method typically employed in this research -- analysis of archival data. As Schmitt (1988) indicates, there is a need to develop experimental forms of exams which incorporate hypothesized factors which might influence DIF. Further, investigators must specify what they mean by cultural experiences. All too often culture is used as an amorphous term which seems equally applicable to life experiences, racial heritage, and ethnic background. In contrast, what is needed is specific theoretical specification of *which* cultural influences might influence DIF, and then experimental investigation of whether these cultural differences are in fact associated with differential item responding. In order to accomplish this goal, researchers must begin with a clear specification of what they mean by cultural influences. The present study hypothesizes that differences in cultural values across individuals of different racial identity will influence item responding. It is argued that individuals of different racial

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identities will be differentially exposed to and therefore motivated to adopt, different cultural preferences. These differences are further expected to influence the responses an individual provides to subjective employment test items.

### *Toward a definition of culture*

The word "culture" has itself experienced a lengthy development which is chronicled by Kroeber and C. Kluckhohn (1952). The present day meaning of culture was originally established in 1871, though its first inclusion in an English dictionary was delayed at least 50 more years. Use of the word "culture" seems to have evolved from use of the word "civilization". Even today, most dictionaries tend to define each in terms of the other. For example, one alternative entry for the word "culture" provided by the 1992 edition of the Random House Webster's Collegiate Dictionary defines culture as "a particular form or stage of civilization, as that of a nation or period: *Greek culture*". This same dictionary offers the following among the alternative definitions for the word "civilization": "any type of culture, society, etc., of a specific place, time, or group: *Greek civilization*". Kroeber and C. Kluckhohn (1952) point out that this complete overlap between the two words was not as common in other languages such as German and French. Even here, however, there was considerable confusion as to what was meant by culture. Perhaps only when considered from a scientific viewpoint, therefore, does culture become more clearly defined. Based on an assemblage of 164 scientific uses of the term "culture", Kroeber and C. Kluckhohn (1952) developed 7 general categories of definitions: descriptive, historical, normative, psychological, structural, genetic, and miscellaneous. Each

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category contains lists of definitions which employ a common theme. Descriptive definitions of culture provide broad definitions with emphasis on the specification of content. Historical definitions emphasize a common social heritage or tradition. Normative definitions emphasize rules, ideals, values, and behavior. Psychological definitions emphasize adjustment, learning, and habit. Structural definitions emphasize the patterning or organization of society. Finally, genetic definitions stress culture as a product or artifact of society.

What conclusions can be drawn regarding the meaning of culture? Kroeber and C. Kluckhohn (1952) provide a comparatively succinct yet specific definition.

According to these authors, culture is composed of "patterns of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and *especially their attached values*" (p. 35) (emphasis added).

#### *Value orientations*

If one is to examine the cultural differences between people, therefore, perhaps it would be wise to begin with an investigation of disparities in values across cultures.

Detailed examination of differences in values across cultures has been conducted by F. Kluckhohn and Strodtbeck (1961). Although proposed over thirty years ago, F. Kluckhohn and Strodtbeck's (1961) typology of cultural value orientations remains the premier classification of cultural values. This typology, therefore, would seem the ideal framework for determining differences in values between cultures. Indeed,

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clinicians have recommended the increased usage of the F. Kluckhohn and Strodtbeck's (1961) framework in order to provide therapeutic improvements to counseling (e.g., Beutler & Bergan, 1991; Carter, 1990; Chapman, 1981; Inclan, 1985).

Kluckhohn and Strodtbeck (1961) argue that all societies encounter highly similar problems. Further, for many of these problems human societies have often found roughly the same answers. However, while there do exist alternative solutions to the solving of a particular human problem, these alternative solutions are not unlimited in number. That is, human problems must be solved within a limited range of possible solutions. Most importantly, F. Kluckhohn and Strodtbeck (1961) argue that although all solution alternatives are present at all times in all societies, certain solutions are preferred for any given society over other solutions. These preferred solutions, according to these theorists, can be termed value orientations. Value orientations are defined as, "complex but definitely patterned (rank-ordered) principles, resulting from the transactional interplay of three analytically distinguishable elements of the evaluative process - the cognitive, the affective, and the directive elements - which give order and direction to the ever-flowing stream of human acts and thoughts as these relate to the solution of 'common human' problems" (p. 4). The three elements are further clarified by the theory of value orientations. The direction function is thought to provide the selection or choice between alternative behaviors; the cognitive function is conceived as providing a framework for one's worldview; and the affective function is concerned with the amount of

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emotional energy or commitment that is available. Although a particular culture is assumed to prefer one value orientation over others, it is an essential part of the theory of F. Kluckhohn and Strodtbeck (1961) that each culture is influenced by all of the optional solutions. Cultures vary in value orientations, therefore, not in the recognized possible solutions, nor in the choosing of a single solution, but in the preferential ordering of solutions. That is, cultures vary in the degree to which the possible solutions to common human problems are preferentially emphasized.

What are the problems which are assumed to be universally encountered by all human societies? F. Kluckhohn and Strodtbeck (1961) argue that humans commonly grapple with 5 basic problems: (1) What is the character of innate human nature? (2) What is the relation of the individual to nature (and supernature)? (3) What is the temporal focus of human life? (4) What is the modality of human activity?, and (5) What is the modality of a person's relationship to others? In order, these problems may be summarized as concerns with orientations toward (1) human nature, (2) person-nature, (3) time, (4) activity, and (5) relations.

The first basic value orientation refers to questioning of the innate goodness of human nature. Is humanity basically Evil? Is it basically Good? Or is it some mixture of Good and Evil? This value orientation is further divided along lines of flexibility. That is, each of the three possible categories of Evil, Good, or Mixed (sometimes referred to as Neutral) are further subdivided based on the flexibility of the human nature. The resulting six possible human nature orientations are: (a) Evil and unalterable (b) Evil and perfectible (c) Good and unalterable (d) Good and

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corruptible (e) an immutable mixture of Good and Evil, or (f) a mixture subject to change. Although Kluckhohn and Strodtbeck (1961) originally proposed these six possible alternatives to human nature, subsequent work has disregarded the flexibility dimension. Thus, only the three general alternatives of Good, Evil, and Mixed are typically considered.

The second basic value orientation represents the relationship between person and nature. F. Kluckhohn and Strodtbeck (1962) see three possible solutions to the problem of how the individual "fits into" the natural world. The first option is Subjugation-to-Nature. Fatalism is the most dramatic consequence of this position. In essence, followers of this option feel that, when it comes to Nature or God, the person's role is simply to accept the inevitable. The elderly patient (or, Christian Scientist) who refuses further medical treatment is an example of a person who has adopted a Subjugation-to-Nature value orientation. A second position is Harmony-with-Nature. Persons adopting this value orientation believe that there is no separation between person, nature, or supernature. Rather, one is merely an extension of the other. This is the orientation attributed to many American Indian tribes. The final possible alternative for the Person-Nature orientation is Mastery-over-Nature. This is the opposite end of the continuum of Subjugation-to-Nature. The basic belief here is that natural forces of all kinds are to be overcome and put to the use of humans. Industrialized societies adopt this perspective as they view nature as something to overcome, or be used as a mere resource for achieving human needs and desires.

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The value orientation of time has less to do with concern how one divides time units via hours, minutes, or days, and more to do with one's conception of what is most important in terms of the Past, Present, or Future. That is, of these three time orientations, which is most influential to the individual? Societies which possess a Past time orientation tend to emphasize the maintenance, or restoration, of long-established traditions. A culture which is characterized by a Present time orientation would primarily emphasize short-term concerns, without regard to the traditions of the Past or consequences for the Future. Finally, a Future orientation is possessed by those cultures in which people anticipate future events to such an extent that Past traditions and Present concerns are de-emphasized.

The fourth value orientation -- Activity -- is concerned with the culture's primary mode of self-expression, and how others typically judge that expression. Again, three possible solutions are identified which are best viewed as part of a continuum: Being, Being-in-Becoming, and Doing. Being represents the least degree of societally imposed restriction upon behavioral self-expression. Rather, Being emphasizes spontaneous expression of human personality. Impulses and desires drive activity to a greater degree than goal-oriented behavior. Being-in-Becoming orientation emphasizes activity which is directed toward the goal of development of all aspects of the self as an integrated whole. As in the Being orientation, the Being-in-Becoming orientation is more concerned with what the human being *is*, than what the human can *accomplish*. A crude example of an individual with a Being-in-Becoming orientation might be the philosophy student at a liberal arts school, who is

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The final orientation in the F. Kluckhohn and Strodtbeck (1962) theoretical framework of values examines the individual's relationships with others. Once more there are three hypothesized orientations: Individualistic, Communal, and Lineal. In societies with an Individualistic orientation, each individual's relationships to other individuals are defined according to goals (and roles) which are autonomous in structure. Although the individual in an individualistic society is given a great deal of autonomy in the pursuit of his or her goals, the individual is still expected to maintain a healthy respect for the goals of other individuals. Thus, students working on an in-class group project are expected to be cooperative with their fellow classmates, but are not discouraged from having their own goals of achieving the highest grade. A Communal orientation emphasizes the goals and welfare of the group over the goals of the individual. In these societies, the individual is recognized as a human only as he is a part of a particular social order. In societies with a Lineal orientation, group goals again take precedence over the individual. Here, however, there are additional emphases on maintaining continuity of the group over time, and preserving the

"ordered positional succession." This orientation is observed wherever kinship ties are the basis for societal structure.

In summary, the cultural values typology of F. Kluckhohn and Strodtbeck (1961), consists of five value orientations, each with three alternatives. Each culture is thought to rank each one of the possible alternatives. The ranking patterns which are most influential in a particular culture are termed the dominant patterns. The less influential rankings of alternatives are referred to as variants. Thus, this theory clearly recognizes individual variation in the ranking of value orientation alternatives.

When comparing across cultures, it is possible to compare the dominant patterns across cultures, or, alternatively, only the highest ranked alternative to each value. The dominant value patterns are expressed such that the most preferred alternative of the 3 alternatives is expressed first, followed by the second most influential alternative, and finally the third. Thus, if the dominant pattern of alternatives for a particular society is *a* over *b* over *c*, this would be expressed as  $a > b > c$ . Further, if a particular culture has no preference between two alternatives *b* and *c*, the dominant value pattern would be expressed as  $a > b = c$ .

F. Kluckhohn and Strodtbeck (1962) offer some speculation as to the highest ranked alternative to each of the value orientation patterns possessed by the "typical" American (read, White European American). These theorists think that many Americans view basic human nature as Evil, but perfectible, based in large part on the strong Puritan influence of early Americans. However, they further argue that a growing number of Americans hold a Mixed perspective of human nature. In contrast

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The dominant value pattern for the Human Nature orientation of European Americans therefore would be: *Mixed > Evil > Good*. Not surprisingly, the man-nature orientation thought to be adopted by the typical American is Mastery-over-Nature. Perhaps nowhere is this as self-evident as our reliance on technology. Indeed, some have argued that major technological failures -- such as the space shuttle Challenger explosion -- serve as mere reminders that humans will never truly control nature.

This suggests the dominant value pattern for the Person-Nature orientation: *Mastery-over > Harmony with > Subjugation to*. The time orientation of the "typical" American, according to F. Kluckhohn and Strodtbeck (1961), is Future. Americans often regard the Past with a cynical view, are discontented with their Present, and look expectantly toward a better tomorrow. The dominant value pattern of European Americans for the Time dimension, therefore, would be: *Future > Present > Past*.

The activity orientation of most Americans is strongly one of Doing. That is, Americans judge their own self-worth as well as that of others primarily upon their accomplishments, and their potential for accomplishments. A typical question a father may ask a daughter about her new beau, for example, is "What does he do for a living?". Clearly, then, the "typical" American is concerned with Doing over the emphasis on spontaneous expression associated with a Being orientation. Thus, the dominant value pattern can be represented as: *Doing > Being-in Becoming > Being*.

Finally, Americans are typically assumed to pursue an Individualistic relational

orientation. This generation is generally interested in pursuing their own achievement, prestige, and social status. Individualism is dominant.

F. Kluckhohn and F. Strodtbeck examined values by examining the United States. Two studies were primarily conducted: the first in a village, and the second in a city. In 4 of the 5 value orientations, the dominant value orientation was individualism, which was divergent when compared to other cultures. The least differentiation was found in farming communities. In urban communities, these communities, these communities, these activity orientation.

Alternative of the time. Application of Kluckhohn and Strodtbeck (1961) has been repeated (Bergin, 1991; Carter & McGoldrick, 1999) shown that similarity.

orientation. This generalization is based upon the perception that Americans are generally interested less in maintaining the goals of some groups, as they are in pursuing their own autonomous goals, which typically include increased wages, prestige, and social mobility. The dominant value pattern consistent with this logic is: *Individualism > Communal > Lineal*.

F. Kluckhohn and Strodtbeck (1961) provided initial evidence for their typology of values by examining the value orientations of five communities in the southwest United States. Two of these communities were American Indian (Navaho and Zuni), two were primarily English-speaking communities (a Mormon village and a farming village), and the fifth community was composed of Mexican-Americans. Differences in 4 of the 5 value orientations were demonstrated between cultures. In particular, the dominant value orientations expressed by the Mexican-American group were the most divergent when compared with those of the other groups. As would be expected, the least differentiation between value orientations was between the Mormon and the farming communities. In comparison to the Mexican- and Native-American communities, these groups preferred the Individual relations orientation, the Doing activity orientation, the Mastery-over-Nature man-nature orientation, and the Future alternative of the time orientation.

Application of the value orientation model of F. Kluckhohn and Strodtbeck (1961) has been repeatedly suggested for use in clinical psychology (e.g., Beutler & Bergan, 1991; Carter, 1990; Chapman, 1981; Inclan, 1985). Citing research that has shown that similarity in values between therapist and client aids the therapy process,

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Beutler and Bergan (1991), for example, have proposed that therapists adopt a framework based on the work of F. Kluckhohn and Strodtbeck (1961) that would provide credibility to therapy involving the examination of personal values. Further, Chapman (1981) suggests that major theoretical frameworks in psychology can be better understood when the value-orientation implicit in the framework is explicated. As an illustration, Chapman outlines the dominant value orientations for Gestalt psychologists vs. Radical Behaviorists. Based on the analysis of the writings of the major proponents of these theories, Chapman (1981) asserts that Gestalt psychologists advocate a Present time orientation, a Mixed human nature orientation, an Individual relational orientation, a Becoming activity orientation, and Harmony between man and nature. Thus, Gestalt psychologists stress the importance of aiding the development of the individual's growth potential by focussing on the individual's current concerns. In contrast, Radical Behaviorists stress the active processes of past reinforcement contingencies on the individual. Therefore, Chapman (1981) suggests that the dominant value orientations of proponents of Behaviorist theory are: a Past time orientation, Mixed human nature orientation, Communal relational orientation, a Doing activity orientation, and a Mastery-over-Nature (i.e., control) relationship between man and nature.

The cultural values of Blacks have received very limited empirical investigation (Carter, 1990). However, several authors have outlined the traditional philosophies of African societies, from which at least some of the traditional values orientations of African Americans might be derived. Specifically, both McFadden

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and Gbekobou (1984) and Nobles (1980) painstakingly outline philosophies in traditional African societies. According to these theorists, Africans traditionally view God as the originator and sustainer of mankind. The natural world is viewed as controlled by God. Man is seen as a union of both biological and spiritual life. As such, a person is viewed as a combination of both good and bad elements. Unity is a concept which is intimately familiar to Africans. The individual person is viewed as existing only because others exist. That is, to be a human is equated with being part of a community. According to Mbiti (1970), an African's self-concept is revealed in the expression, "I am because we are; and because we are, therefore, I am" (cf. Nobles, 1980). The emphasis in African philosophy is clearly upon the community. Social relations are characterized by spontaneity. Conversations can spring up with any individual, including those one has never previously met. Traditional African society further sees no distinction between one's beliefs and one's actions. Actions are viewed as indicants of what one believes.

African societies place great emphasis on the preservation of traditional lifestyles. The oral tradition, in which beliefs and acts are a part of the community, ensured this preservation. Time is very elastic to Africans, though major concern is placed upon the past and the present. Although all of man is viewed as part of a community, kinship determines the strongest ties. According to Nobles (1980), kinship, along with strong beliefs in the survival of the tribe, combined to form one of the strongest cohesive devices in traditional African life. McFadden and Gbekobou (1984) concur, citing the family as the most basic unit of life. In African society,

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These philosophies clearly suggest the dominant value orientations of African culture of F. Kluckhohn and Strodtbeck's (1961) typology of values. Although there is not a large degree of evidence concerning the African philosophy of basic human nature, Nobles (1980) points out that traditional African groups generally viewed man as possessing a "twin" nature of both good and bad elements. This suggests the dominant African pattern for the Human Nature orientation would be: *Mixed > Good = Evil*. The strong emphasis on unity suggest that Africans would strongly view the relationship between Person and Nature as one of harmony. However, beliefs of God's ultimate power over the universe suggests that Africans also value a Nature over Person orientation. It seems the dominant African value orientation pattern for the relationship between Person and Nature would be: *Harmony with > Subjugation to > Mastery over*. The importance of traditional life, combined with the emphasis on living in the present, suggest the following dominant pattern for the African's Time orientation: *Past = Present > Future*. In consideration of the spontaneity present in traditional African social relationships, it is suggested that dominant Activity pattern for Africans would be: *Being > Being -in-Becoming > Doing*. Finally, the strong emphases on kinship and community clearly suggest the following dominant African pattern for the Relations orientation: *Lineal > Communal > Individualistic*. Table 1 provides a summary of the theoretical value orientations for individuals of Afrocentric and White Eurocentric cultures.

Value Orientation

Human Nature

Person-Nature

Time

Activity

Relations

**Table 1:**  
**Theoretically-derived Dominant Value Orientation Patterns**

<u>Value Orientation</u>	<u>African American</u>	<u>White American</u>
<b>Human Nature</b>	Mixed>Good=Evil	Mixed>Evil>Good
<b>Person-Nature</b>	Harmony>Subj>Mastery	Mastery>Harmony>Subj
<b>Time</b>	Past=Present>Future	Future>Present>Past
<b>Activity</b>	Being>Becoming>Doing	Doing>Becoming>Being
<b>Relations</b>	Lineal>Communal>Indiv	Indiv>Communal>Lineal

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The question which arises at this point is whether Blacks might possibly retain the dominant value orientation patterns associated with African philosophy. Nobles (1980) argues that in order for African philosophy to maintain an influence on Blacks living in America, two prerequisites must occur. First, the carriers of the original culture must have been isolated from the new culture. Secondly, the behavioral expression of the traditional culture must not openly conflict with the cultural-behavioral elements of the new culture. Nobles (1980) argues that the holding of Black slaves in captivity worked to maintain traditional African philosophies. The institution of slavery simultaneously provided isolation from the American culture, as well as preserved the oral traditions of African philosophy by discouraging even basic education. Following the Civil War, racial segregation continued to encourage the maintenance of African philosophies. Further, inner city ghettos may be seen as continuing isolation even today. However, the degree to which African philosophies are maintained today in the late 20th century is questionable, especially in consideration of television's impact on society, as well as the advent of improved educational equality between the races.

An initial investigation of the differences between the value orientations of Blacks and Whites was conducted by Carter (1990). In a comparison of 300 Black with 500 White college students, Carter (1990) found many similarities between these groups in terms of the most important alternative chosen by each group for each value orientation. Both groups had the highest mean response to the Mixed alternative of Human Nature, Harmony with Nature for the Person-Nature orientation, Future

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orientation for Time, Doing alternative for the Activity dimension, and Individualistic alternative for the Social Relations orientation. This research indicates that both Blacks and Whites generally share the most typical alternative to each of the basic value orientations. Further, these typical responses seem to be more in line with the expected White American values than with African philosophies. Indeed, the only finding which was inconsistent with the expected dominant White American alternative was found for the Nature orientation. Harmony with Nature was typically chosen by both groups over Mastery over Nature, which is more consistent with the expected dominant alternative for Blacks. This evidence would seem to suggest that young Americans, whether Black or White, are much more alike in their value orientations than different. However, significant differences in preferences for value orientation alternatives were detected when the entire dominant value patterns were considered. Blacks were more likely than Whites to endorse the (a) Evil alternative of the Human Nature orientation, (b) the Subjugation to Nature alternative of the orientation examining the relationship between Person and Nature, (c) the Past oriented Time orientation, (d) the Being-in-Becoming activity orientation, and (e) the Lineality alternative of the Social Relations orientation. Of these, the Subjugation to Nature, Past oriented, and Lineality alternatives are each preferences which are consistent with African philosophy. Carter (1990) argues that the Black preference for the Evil alternative of the Human Nature orientation may result from personal experiences with racial discrimination. Consistent with expectations, Whites in the Carter study expressed a significantly greater preference for the Individualistic

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As an initial comparison of the value orientations of Black and White college students, the study by Carter (1990) reveals some interesting findings. Most noticeably, the value orientation alternatives selected most often by both groups were exactly the same. Further, there was a great deal of similarity in the preferential ordering of the value orientation patterns for the two groups. However, there were considerable differences in the mean responses to the alternatives. Although the majority of these mean differences were either consistent with theory or explainable in terms of group experience, several of these differences were unexpected. Although it seems plausible at this point to say that Blacks and Whites share a preference for some core values, there does seem to be an influence of Afro-centric and Euro-centric values, respectively, upon the comparative preferences for various value orientation alternatives. However, further examination of the value orientations of these two groups is necessary before drawing firm conclusions.

#### **Racial vs. Social Class Differences in Value Orientations**

The preceding paragraphs implicitly argue that the observed differences in value orientations for members of different races are associated with disparate cultural backgrounds (i.e., Afro-centric, Euro-centric, Hispanic, etc.). Similar arguments have been applied to provide explanation for the findings that Black students often do less well in classroom achievement than their White counterparts. Kaplan (1963), for

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example, points out that "the term culturally deprived is now viewed with some disfavor by certain sociologists and educators, more accurate terms they submit are culturally different or economically deprived. They maintain that children from impoverished families are not culturally deprived in the sense that they are cultureless. Rather, their cultures and heritages differ from those cultivated by the middle class schools they attend" (cf. Atolagbe, 1980). An alternative explanation for differential values of members of different races is posed by those who argue that social class and economics are primarily responsible for these findings.

In an attempt to investigate the validity of these two competing explanations for the differences in expressed values, Malpass and Symonds (1974) administered a questionnaire assessing values relevant to work, personal characteristics, physical living conditions, creativity, and religiousness to high school students of different race and social class. These researchers found that social class differences were best able to account for differences in 4 of the 5 types of values examined. Only values toward religiousness were better explained by race. However, these findings can be questioned based on the limited sample utilized by Malpass and Symonds (1974). Of the 142 high school student subjects, only 27 were Black. All of these 27 were labelled as low social class.

Solorzano (1992) offered a more serious challenge to the argument that differences in academic achievement should be attributed to differences in cultural values. Solorzano (1992) compared the college aspirations of over 16,000 White 8th graders with the college aspirations of nearly 3,000 Black 8th graders. Contrary to

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suggestions that Blacks place low value on educational achievement, findings revealed that, after controlling for SES, Black eighth graders possessed higher educational aspirations than their White counterparts. Further, when the parents of many of these students were asked about their college aspiration for their children, Black parents reported higher levels of aspirations for their children than did White parents, after controlling for social class. Solorzano (1992) uses these findings to argue that differences in cultural values should not be used to explain differences in academic achievement aspirations. Rather, he suggests that researchers closely examine the influence of social class upon observed racial differences.

These arguments are in direct contrast to the reasoning put forth by Nobles (1980). In his attempt to develop a Black Psychology, Nobles argues

"Black Americans derive their most fundamental self-definition from several cultural and philosophical premises which we share with most West African 'tribes'. . . Black Psychology is something more than the psychology of so-called underprivileged peoples, more than the experience of living in ghettos or of having been forced into the dehumanizing conditions of slavery. . . Its unique status is derived from the positive features of basic African philosophy which dictate the values, customs, attitudes and behavior of Africans in Africa and the New World" (p. 18).

The argument that cultural values are determined by something more than mere social class status is bolstered by the findings of Chandler (1971). Chandler's (1971) investigation of Mexican Americans revealed that even though increased educational attainment was associated with the increased adoption of modern values, the dominant value orientation held by this sample remained very traditional.

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Clearly, two competing arguments have been presented which claim to be determinants of the adoption of value orientation patterns. It seems clear that at this point neither possibility can be entirely ruled out. Further research examining the dual influences of social class and cultural influences on the development of value orientations appears warranted. Although the present study is not primarily concerned with the influence of social class on the expression of cultural values, analyses will be conducted to control for the effects of SES on cultural. The following section proposes that an individual's cultural values are sufficiently strong so as to influence item responding on subjective employment tests.

### **Cultural Values and Item Responding**

Job applicants completing a subjective employment test such as a biodata test are asked to choose which of several multiple choice options they feel is most indicative of their own past actions, most similar to their own feelings, or most likely their course of action, given a specified situation. In comparison to objective cognitive ability-type tests in which the examinee relies on their skills and knowledges to produce a correct response, examinees completing a subjective test must depend upon their own feelings, propensities, and dispositions to provide a response. Could cultural values influence responses to these types of subjective employment tests? If the prolific value theorist Milton Rokeach is correct, the answer would seem to be a definite "yes".

According to Rokeach (1973), values are enduring because during childhood they are instilled in us in an absolute, all-or-none manner. Children are instructed that

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a certain value is always desirable. Therefore, we are instructed as children to believe that it is desirable to be not just a little honest, but to be completely honest. Rokeach (1973) argues that as the child matures, independently held values often come into conflict, requiring a preferential ordering of these values. For example, conflict between the values of honesty and obedience to parents may arise when a parent instructs the child to lie. This process gradually produces a hierarchically ordered system of values, in which each value is ordered in priority to every other value.

Once formed, values have a strong motivational component as well as cognitive, affective, and behavioral dimensions (Rokeach, 1976). Values, according to Rokeach, are determinants of both attitudes and behaviors. This definition is consistent with Allport's (1961) assertion that "a value is a belief upon which a man acts by preference"(p. 454). The idea that values determine preferences is further supported by C. Kluckhohn's (1952) idea that values determine "oughtness".

Given the impact of values on preferences, attitudes, and behavior, it seems extremely likely that cultural values will exert an influence on the responses examinees provide to biodata employment tests. As stated above, biodata instruments assess the personal backgrounds and life experiences of the individual. Additionally, biodata items often assess the respondent's personal preferences. Applicants administered a biodata inventory are asked to answer each item by choosing from several multiple choice response options. Given the subjective nature of these tests, respondents must rely on their preferences, attitudes, and past behaviors for responding. These are exactly the components that Rokeach argues are influenced by

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values. Therefore, to the extent that there are cultural value differences between people of different racial identity, it would be expected that biodata item responding will be consistent with the values associated with a particular culture.

### **The Present Study**

Despite a voluminous literature examining the possibility of item bias, the majority of the existing literature is focussed on differentiating the various techniques for the detection of such bias, rather than exploring factors leading to differential item functioning. The literature which does seek to uncover the factors leading to item bias is susceptible to criticism in that it all too often is conducted without the benefit of a priori hypotheses, nearly universally limits the examination of bias to cognitive ability tests, and uses a criterion of physical characteristics as the basis for determination of subgroup membership. Further, any significant findings revealed by this research is often attributed to some global "cultural" or experiential differences between the subgroups examined. The proposed study will rectify these shortcomings of the past by:

- (1) examining differential item functioning for biodata employment tests;
- (2) defining subgroup membership in terms of perceived racial identity;
- (3) specifying the cultural values thought to influence item responding; and
- (4) testing specific hypotheses.

Figure 1 represents the overall model of differential item functioning which is examined in the proposed study. Although cultural disparity has routinely been offered as an explanation for observed differences in item bias investigations (e.g.,

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Dorans, Schmitt, & Bleistein, 1992; Freedle & Kostin, 1990; Scheuneman & Gerritz, 1990), very little research has examined the actual dimensions of culture which influence item responding. In providing an initial investigation of the influence of cultural values on the response patterns of examinees, the present study proposes to examine the utility of racial identity, rather than observable racial characteristics, as the grouping variable. The initial proposition of the model offers the rather intuitive suggestion that racial identity will be related to, and largely determined by, one's physical, observable racial characteristics.

**Hypothesis 1:**

Perceived racial identity will be moderately related to a single item measure of self-reported race.

Although this hypothesis argues that racial identity will be determined in part by the traditional physically observable racial categories, it is *not* believed that racial identity is completely determined by observed racial characteristics. Due to individual differences in cultural, educational, and socioeconomic experiences, as well as heterogeneity in the physical expression of biologically determined racial characteristics, perceived racial identity is proposed to provide a more accurate classification of *the* race of an individual than physical characteristics.

The second hypothesis examines the relationship between physically determined race, racial identity, and cultural values. According to Helms (1990), racial identity refers to an individual's perception that (s)he shares a common racial heritage with a particular racial group. Whereas biological markers of race (e.g., skin

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color) enable us to categorize individuals on mere physical characteristics, racial identity allows categorization based upon actual psychological characteristics of the individual. These psychological characteristics would be expected to exhibit a stronger relationship with other psychological variables than would variables formed on the basis of physical characteristics. Therefore, it is expected the development of specific cultural values will be more strongly related to racial identity than physically determined race.

**Hypothesis 2:**

Perceptions of racial identity will be more strongly related to cultural values than a single item self-reported race measure.

F. Kluckhohn and Strodtbeck's (1961) typology of values suggests that peoples of differing racial identities would be expected to exhibit differences in their dominant value orientation patterns. According to this logic, the dominant value orientation pattern associated with a particular cultural heritage (i.e., Eurocentric, Afrocentric, etc.), would be largely maintained in American society, even if the individual was born and raised in the United States. The individual's exposure to the value system associated with their racial identity, which would presumably be provided by parents, grandparents, and others of the same racial identity, would outweigh the influence of exposure to the typically diversified American culture in the formation of cultural values. In the opinion of the present author, this argument is absurd. In this day of mass communication and public education, Americans who have been born and raised in the United States are likely to be very similar in their

dominant cultural value patterns. Although groups such as the Amish provide evidence that mass communication cannot be equated with mass influence, it is expected that the dominant cultural value patterns of African- and White-Americans will be highly similar.

### **Hypothesis 3:**

The dominant cultural value pattern for both of the racial identity groups examined in this study will be consistent with the proposed dominant value patterns of the typical White American. Specifically,

Human Nature:	Mixed > Evil > Good
Person-Nature:	Mastery > Harmony > Subjugation
Time:	Future > Present > Past
Activity:	Doing > Being in Becoming > Being
Relations:	Individualistic > Communal > Lineal

This hypothesis is consistent with Atolagbe's (1980) conclusion that African and White Americans have values which are more alike than different. Initial evidence for hypothesis 3 is further provided by Carter (1990). As discussed above, the dominant value pattern expressed by Blacks and Whites in Carter's sample of college students was not exactly consistent with prior theoretical speculation of the typical White cultural value pattern. Most strikingly different from the above hypothesized patterns was the emphasis on the Harmony alternative of the Person-Nature value orientation. However, rather than base the hypotheses regarding the dominant value patterns of "typical" Americans on the result of a single study (e.g., Carter, 1990), these hypotheses are based upon the preponderance of theory (e.g., Beutler & Bergan, 1991; F. Kluckhohn & Strodtbeck, 1961).

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Although the dominant value patterns exhibited by Americans of different racial identity are not expected to differ, it is by no means the intention of the present author to suggest that cultural value orientations do not discriminate between these groups. Rather, it is expected that racial identification will have a more subtle influence in the development of value orientations such that subgroups will differ in their preferential endorsement of the various value orientation alternatives. These differential preferences are expected to be consistent with the proposed dominant value orientation patterns associated with a particular racio-ethnic group's culture (see Table 1). The concept of racial identity is relatively novel in psychological research. Therefore, the influence of racial identity strength on the adoption of cultural values will be considered exploratory.

Therefore, this hypothesis argues that racial identity classification and racial identity strength may interact to determine the possession of cultural values.

In order to dispel the rival hypothesis that social class determines the development of cultural values, social class will be statistically controlled across groups.

#### **Hypothesis 4:**

After controlling for social class, the relative endorsements of each value orientation alternative will be predicted by racial identity classification. Specifically, it is expected that:

- 4A. African-Americans will place greater emphasis on the Good alternative of the Human Nature orientation than their White-American counterparts.

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- 4B.** African-Americans will place greater emphasis on the Subjugation to Nature alternative of the Person-Nature orientation than their White-American counterparts.
- 4C.** African-Americans will place greater emphasis on the Harmony with Nature alternative of the Person-Nature orientation than their White- American counterparts.
- 4D.** African-Americans will place greater emphasis on the Past alternative of the Time orientation than their White-American counterparts.
- 4E.** African-Americans will place greater emphasis on the Being alternative of the Activity orientation than their White-American counterparts.
- 4F.** African-Americans will place greater emphasis on both the Lineal and Communal alternatives of the Relations orientation than their White-American counterparts.

Carter's (1990) examination of the differences between the value orientations of Blacks and Whites again lends some initial support to hypothesis 4. However, Carter (1990) found several differences which were not consistent with prior theoretical speculation. Most notably, White-Americans were found to be significantly more likely to endorse the value orientation indicating Communal relationships than were Blacks. Once again, however, the above hypothesis has been formed on the basis of theory that has not yet received an adequate test from the results of a single study.

The primary aim of the present study is to examine the relationship between cultural values and differential item functioning on subjective employment tests. The remaining hypotheses, therefore, concentrate on the relationship between culture and item responding. Hypothesis 5 examines the relationship between differences in endorsement of the various value orientation alternatives, and responses to biodata test items containing options which have been a priori classified as reflecting a certain value orientation.

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**Hypothesis 5:**

There will be a significant relationship between endorsement of biodata item options a priori classified as reflecting some alternative of a cultural value orientation, and endorsement of the corresponding alternative of the cultural value orientation scale. Specifically, the following hypotheses will be examined:

- 5A. Biodata item options classified as reflecting people's good human nature will be more likely to be endorsed by individuals who have high scores on the Good scale of the Human Nature value orientation than those with low scores on this scale.
- 5B. Biodata item options classified as revealing human's destined fate will be more likely to be endorsed by individuals who have high scores on the Subjugation to Nature scale of the Person-Nature value orientation than those with low scores on this scale.
- 5C. Item options classified as revealing people's oneness with nature will be more likely to be endorsed by individuals who have high scores on the Harmony with Nature scale of the Person-Nature value orientation than those with low scores on this scale.
- 5D. Item options which emphasize the past are more likely to be endorsed by individuals who have high scores on the Past scale of the Time value orientation than those with low scores on this scale.
- 5E. Item options which emphasize the present are more likely to be endorsed by individuals who have high scores on the Present scale of the Time value orientation than those with low scores on this scale.
- 5F. Item options which are classified as indicative of emphasizing spontaneous behaviors will be more likely to be endorsed by individuals who have high scores on the Being scale of the Activity value orientation than those with low scores on this scale.
- 5G. Item options which are classified as emphasizing the importance of the group over the individual will be more likely to be endorsed by those individuals who have high scores on the Lineal or Communal scales of the Relations value orientation than those with low scores on these scales.

Hypothesis 6 finally examines the relationship between cultural values and actual differential item functioning on subjective employment tests.

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**Hypothesis 6:**

When racial identity is used as the grouping factor, DIF will be detected in biodata items when an option in the item contains a cultural value alternative which differs in preferential rating across subgroups. Specifically,

- 6A. Biodata items which contain a rationally keyed option which reflects the basic good nature of man will be differentially less difficult for African-Americans.
- 6B. Biodata items which contain a rationally keyed option which reflects sentiments of human subjugation to nature will be differentially less difficult for African Americans.
- 6C. Biodata items which contain a rationally keyed option which reflects sentiments of human harmony with nature will be differentially less difficult for African Americans.
- 6D. Biodata items which contain a rationally keyed option which emphasizes the past or present will be differentially less difficult for African Americans.
- 6E. Biodata items which contain a rationally keyed option which emphasizes spontaneity will be differentially less difficult for African Americans.
- 6F. Biodata items which contain a rationally keyed option which emphasizes concerns of the group will be differentially less difficult for African Americans.

Although each of these hypotheses are worded so as to indicate that African-Americans would benefit from the inclusion of biodata items reflecting cultural values, it is important to note that African-Americans would be expected to experience differentially more difficulty than White-Americans when a non-keyed biodata option reflects one of the above cultural values.

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## **METHOD**

### **Sample**

Two hundred sixteen college students at a large Midwestern university served as subjects for this study. Participants were initially recruited through a psychology subject pool, and received credit toward fulfillment of course requirements in exchange for their participation. Additional Black participants were recruited by announcements posted on campus. These participants were paid \$10 each for participation in the 2 hour study.

Following data collection, the data was screened for out-of-bounds and random responding. Based on this inspection, 9 subjects were discarded from the analyses. Further, the analyses examined only those subjects reporting a Black or White demographic classification. The resulting sample size for analysis was 108 Whites, and 99 Blacks. Thirty-six percent of the sample was male. The median age of the sample was 20.18.

### **Measures administered**

Subjects completed a test battery consisting of a demographic information sheet, a two-component racial identity scale, a cultural values scale, a cognitive ability scale, random response and social desirability scales, and numerous biographical information (biodata) items. Each of these scales is presented in Appendix A.

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### *Demographic Information*

Participants recorded demographic information pertaining to the individual's racial classification, age, sex, parental education, and annual household income during childhood.

### *Racial Identity*

Racial identity was assessed by two scales created by the present author -- racial identity classification and racial identity strength (see Appendix A). The 15 item racial identity classification scale was intended to assess both reference group and ascribed identity. The classification items inquired about the racial/ethnic group the individual spends the majority of his/her time with, feels most comfortable with, admires most, etc. The individual's perceived racial identity was determined by whatever racial/ethnic group the individual endorsed most frequently. The racial identity strength scale used in the present study was initially composed of 20 items assessing the strength of an individual's racial identity. Following factor analysis, this scale was reduced to 8 items (see Results). The racial identity strength items required the individual to indicate on a 7 point Likert-type scale the degree to which race is a conscious and important part of his/her identity. The mean response to these items indicated the strength of one's racial identity.

### *Cultural Values*

A modified version of the Intercultural Values Inventory (ICV) (Kohls, Carter, & Helms, 1984) was used to assess cultural value orientations. This scale is composed of 150 items and was created to assess the 5 cultural value orientations and

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their alternative solutions originally proposed by Kluckhohn and Strodtbeck (1961). Each value orientation is assessed by 30 items. These thirty items are further divided into subscales such that each value orientation alternative is assessed by 10 items. For each item, respondents will indicate their level of agreement on a 7 point Likert-type scale as to whether the item reflects a value by which they either live their lives or would raise their children . The subscales were scored by computing the mean level of endorsement of all items composing the scale. Thus, for each of the 5 value orientations, the individual received 3 subscale scores.

Carter and Helms (1990) report internal consistency reliability estimates ranging from .50 to .79 for the 15 subscales of the ICV, with a mean internal consistency estimate of .66.

#### *Biodata Employment Test Items*

The present author searched pre-existing item banks of biographical data tests in order to identify employment items which reflected the value orientations and alternatives proposed by Kluckhohn and Strodtbeck (1961). Only item banks which were previously used in selection testing, or were intended for selection purposes, were examined. Items which were identified by the present author as assessing one or more of the value orientation alternatives were selected for possible inclusion in the present study. Items were initially selected if either the stem, or one or more options reflected a value orientation alternative.

Two additional raters were then asked to read each of the biodata items and indicate the value orientation alternative or alternatives to which it was related. These

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raters were assigned the additional task of rating their degree of confidence that the item stem or option reflected the particular value orientation they had assigned. This rating was conducted on a 4 point Likert-type scale ranging from 1 "Not at all confident" to 4 "Very confident". Biodata items were selected for inclusion in the present study only if (a) two of the three raters (including the author) agreed the item stem or an item option reflected a particular value orientation alternative, and (b) at least one of the raters assigned a confidence rating of "3" or higher to their rating. This process resulted in the inclusion of 107 biodata items. The value orientations of Human Nature, Person-Nature, Time, Activity, and Relations were reflected in 5, 11, 13, 42, and 36, of the items respectively. Several items were judged to reflect alternatives from more than one value orientation. Each of the biodata items used in the present study is found in Appendix A, along with a listing of the value orientation alternative(s) judged to be reflected in each item, and the name of the scale from which the item was obtained.

Two independent raters were asked to develop a scoring key for each of the biodata items based on the job of police officer. Each rater was provided with seven KSA dimensions thought to represent job-relevant KSAs for the job of police officer, and asked to develop a scoring key for each item which reflected the important KSAs for the job. These KSA dimensions were the Ability to Organize, Plan, & Prioritize, Ability to Communicate Orally, Ability to Relate Effectively with Others, Ability to Maintain a Positive Image, Ability to Attend to Detail, and Initiative and Motivation. Raters were also given the opportunity to omit a scoring key for a particular item if

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the item was felt to be completely unrelated to the job of police officer. These raters recommended the identical scoring key for 85/107, or 79%, if the items.

Discrepancies between the two independent scorers were resolved by the present author. A total biodata test score was developed by summing across each of the separate biodata items.

#### *Random response and Social Desirability scales*

Poor motivation levels could potentially lead subjects to respond randomly or carelessly to the items composing the test battery. In order to detect individuals of exceptionally low motivation, random response items developed by Hough (1990) were distributed throughout the battery. This scale is composed of 7 items which are easily answered correctly if the individual takes the time to read the item thoroughly. Participants with incorrect responses to two or more of these items were excluded from all analyses. Low internal consistency reliability estimates found in past research using this scale (e.g., Hough, 1990) are attributable to the low response variability to the items composing the scale.

Additionally, two social desirability scales were administered to subjects based on the work of Paulhus (1988). These scales are intended to assess both positively biased honest answers, as well as deliberate faking. Paulhus (1988) found test-retest reliability estimates of .65 and .69 after a 5 week period, as well as acceptable internal consistency reliability estimates (.68 to .86). It should be noted that the inclusion of the social desirability scales was for exploratory purposes only.

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### *Cognitive Ability*

General cognitive ability was assessed by use of the Wonderlic Personnel Test. Test takers were given 12 minutes to complete the 50 items composing the Wonderlic Personnel Test. The Wonderlic has demonstrated acceptable internal consistency reliability (.88 to .94) and criterion-related validity estimates ( $r_{xy} = .22$  to  $.53$ ) across a wide variety of jobs (Wonderlic Personnel Test, Inc., 1992). The inclusion of the Wonderlic in the present test battery was primarily for exploratory purposes.

### Procedure

Upon arrival for study participation, subjects were informed that they were about to complete employment-type items designed to assess attitudes, preferences, and experiences. Subjects were informed that many of the items they were completing were very representative of actual employment items that they would likely encounter if applying for a job. Participants were told that they could pretend that they were completing the tests as part of an application process for a position in a local law enforcement agency. In order to motivate subjects to respond accurately, subjects were informed:

"Following the completion of all data collection, the 6 individuals with the highest test scores will each receive \$25 cash. However, included in the test battery are items designed to detect lying and faking. Subjects who are detected as either lying or faking will not be eligible for one of the \$25 awards."

Subjects were initially administered the Wonderlic Personnel Test. Following the 12 minute testing, test forms were collected, and the remaining measures were

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distributed. Participants were given as much time as required to complete the additional measures.

### Analyses

The data were initially scanned for out of bound responses and outliers.

Correlation and hierarchical regression were used to investigate the relationships between racial variables and cultural values.

Although several procedures for the identification of differential item functioning have gained scientific acceptance, the two most popular have been the IRT and Mantel-Haenszel procedures. However, traditional uses of both the item response and Mantel-Haenszel procedures require dichotomously scored items. Thus, these procedures require the use of a scoring key in which some responses are considered "correct" and others are considered "incorrect". Use of these approaches is unwarranted in the present investigation. Unlike many previous investigations of differential item functioning in which researchers have analyzed pre-existing data sets composed primarily of objective items, the present study utilizes items which are not easily dichotomously scored. Although some biodata items may have only one correct option, many biodata items are scored in such a manner that different options receive varying degree of credit. A method of examining differential item functioning that was capable of analyzing polychotomous responses was therefore desired.

Recently, several authors have suggested using item bias procedures which examine polychotomous responses (e.g., Dorans, Schmitt, & Bleistein, 1992; Green,

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Crone & Folk, 1989). Green, Crone, and Folk (1989), for example, suggest use of log-linear analysis examining the main effects and interactions of ability, option choice, and group membership. An item is considered to exhibit DIF whenever the option choice by group interaction is necessary to explain the model.

Hypotheses 5 and 6 were pursued using loglinear analysis to examine the relationship between racial identity group membership, cultural value alternative, and option selected. For each of these hypotheses, loglinear analyses were repeated 107 times -- once for each of the biodata items included in the study. Hypothesis 5 examines the influence of cultural values on responses to biodata employment items. As noted above, each biodata item was selected for inclusion in the study only if the item was judged to reflect a particular cultural value orientation. Although 3 subscales compose each cultural value orientation, Hypothesis 5 was tested by examining the influence of only a single cultural value alternative per biodata item. This decision was made in response to concerns with family-wise error rates. The cultural value alternative examined for a particular item was the cultural value alternative judged most closely associated with the item, based on the direction of the stem and response options.

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## RESULTS

### Descriptive Information

This introductory section is intended to provide descriptive information regarding each of the scales used in the present study.

The means, standard deviations, and coefficient alpha reliability estimates of all study variables are presented in Table 2. The alpha reliability estimates of the fifteen cultural value scales composed of 10 items each were initially estimated to be in the range of .54 to .78, with a mean = .66. These estimates were consistent with reliabilities reported in previous research (e.g., Carter, 1984; Carter & Helms, 1987). Using ten items for each of the cultural value scales, Carter (1984) reported alphas ranging from .37 to .73, with a mean reliability of .52. Carter and Helms (1987) also used the full ten items in each of the 15 scales, and reported alphas ranging from .50 to .76, with a mean of .65. However, in an attempt to increase coefficient alpha reliability estimates for these scales in the present study, principal components analysis was used to determine the underlying factor structure of each scale. These results were closely scrutinized to determine whether the resulting factors were consistent with the theoretical construct the items were intended to assess. Next, reliabilities were calculated for those items composing factors which were consistent with the intended construct. Item-total correlations were inspected. If this empirical analysis indicated that dropping a particular item would increase scale reliability, the item was once again inspected for theoretical consistency with the intended construct. If the item was determined to be theoretically consistent with the intended construct, the item was retained. If the item was judged to be only tangentially related to the intended construct, it was dropped, and the reliability was recalculated. This procedure resulted in the deletion of an average of 2.7 items from each

Black and White

Variable

Personal Info  
Racial Identity  
Age  
Sex  
Father Education  
Mother Education  
Income  
Urbanicity

Cultural Values  
Evil  
Mixed  
Good  
Supplication  
Harmony  
Mastery  
Past  
Present  
Future  
Being  
Being-in-Becoming  
Doing  
Literal  
Collateral  
Individual

Test Score In  
Cognitive Ability  
Biometric Test  
Random Response  
Self-deception  
Impression Management

\* coded 0 = f

**Table 2:**  
**Overall Means, Standard Deviations, and Reliability Estimates**

*Black and White Samples Combined*

<b>Variable</b>	<b># of items</b>	<b>Mean</b>	<b>SD</b>	<b><math>\alpha</math></b>
<b><u>Personal Information</u></b>				
Racial Identity Strength	8	3.76	.73	.87
Age	1	20.18	2.14	n/a
Sex <sup>a</sup>	1	.36	.48	n/a
Father Education	1	4.26	1.25	n/a
Mother Education	1	4.31	1.08	n/a
Income	1	3.83	1.53	n/a
Urbanicity	1	3.05	.84	n/a
<b><u>Cultural Value Scales</u></b>				
Evil	8	2.87	.57	.73
Mixed	7	3.85	.42	.59
Good	7	3.79	.45	.64
Subjugation	8	3.15	.63	.78
Harmony	9	3.64	.42	.79
Mastery	8	2.83	.51	.67
Past	6	2.48	.54	.66
Present	10	3.55	.48	.79
Future	9	3.60	.45	.72
Being	7	3.66	.43	.69
Being-in-Becoming	6	3.57	.46	.64
Doing	7	3.84	.44	.73
Lineal	8	2.70	.51	.69
Collateral	6	3.10	.45	.55
Individual	4	4.12	.49	.73
<b><u>Test Score Information</u></b>				
Cognitive Ability	50	23.39	5.96	.72
Biodata Test Score	114	88.45	14.16	.82
Random Response Scale	7	.27	.45	n/a
Self-deception	17	7.20	2.67	.58
Impression Management	20	6.34	3.56	.80

<sup>a</sup> coded 0 = female, 1 = male

Black Sample

Variable

Personal Information

Racial Identity

Age

Sex

Higher Education

Lower Education

Income

Urbanicity

Cultural Values

Evil

Mixed

Good

Sitruization

Harmony

Mastery

Past

Present

Future

Being

Being-in-Becoming

Doing

Literal

Collateral

Individual

Test Score Information

Cognitive Ability

Baseline Test Score

Random Response

Self-deception

Impression Management

Controlled 0 = item

Table 2 (cont'd)

*Black Sample Only*

<b>Variable</b>	<b># of items</b>	<b>Mean</b>	<b>SD</b>	<b><math>\alpha</math></b>
<b><u>Personal Information</u></b>				
Racial Identity Strength	8	4.22	.56	.79
Age	1	20.18	1.70	n/a
Sex <sup>a</sup>	1	.23	.42	n/a
Father Education	1	3.87	1.23	n/a
Mother Education	1	4.11	1.11	n/a
Income	1	3.35	1.47	n/a
Urbanicity	1	3.45	.70	n/a
<b><u>Cultural Value Scales</u></b>				
Evil	8	2.97	.60	.75
Mixed	7	4.00	.35	.35
Good	7	3.80	.48	.67
Subjugation	8	3.42	.55	.71
Harmony	9	3.67	.41	.76
Mastery	8	2.90	.49	.67
Past	6	2.56	.57	.66
Present	10	3.59	.48	.74
Future	9	3.71	.49	.75
Being	7	3.64	.43	.60
Being-in-Becoming	6	3.59	.46	.57
Doing	7	3.94	.42	.69
Lineal	8	2.85	.48	.62
Collateral	6	3.14	.47	.47
Individual	4	4.14	.49	.70
<b><u>Test Score Information</u></b>				
Cognitive Ability	50	20.80	5.00	.71
Biodata Test Score	114	90.77	14.08	.82
Random Response Scale	7	.32	.47	n/a
Self-deception	17	7.87	2.53	.
Impression Management	20	6.90	3.35	.

<sup>a</sup> coded 0 = female, 1 = male

White Sample

Variable

Personal Information  
Racial Identity  
Age  
Sex  
Father Education  
Mother Education  
Income  
Urbanicity

Cultural Values  
Evil  
Mixed  
Good  
Subjugation  
Harmony  
Mastery  
Past  
Present  
Future  
Being  
Being-in-Becoming  
Doing  
Lineal  
Collateral  
Individual

Test Scores  
Cognitive  
Biometric Tests  
Random Response  
Self-deception  
Impression

Controlled Variables

Table 2 (cont'd)

*White Sample Only*

<b>Variable</b>	<b># of items</b>	<b>Mean</b>	<b>SD</b>	<b><math>\alpha</math></b>
<b><u>Personal Information</u></b>				
Racial Identity Strength	8	3.34	.60	.77
Age	1	20.19	2.49	n/a
Sex <sup>a</sup>	1	.47	.50	n/a
Father Education	1	4.62	1.16	n/a
Mother Education	1	4.50	1.03	n/a
Income	1	4.27	1.46	n/a
Urbanicity	1	2.67	.77	n/a
<b><u>Cultural Value Scales</u></b>				
Evil	8	2.78	.52	.72
Mixed	7	3.71	.42	.60
Good	7	3.78	.41	.59
Subjugation	8	2.90	.60	.80
Harmony	9	3.60	.42	.82
Mastery	8	2.77	.52	.70
Past	6	2.41	.50	.69
Present	10	3.51	.49	.82
Future	9	3.50	.38	.59
Being	7	3.69	.43	.65
Being-in-Becoming	6	3.54	.46	.69
Doing	7	3.75	.44	.72
Lineal	8	2.56	.49	.73
Collateral	6	3.06	.43	.53
Individual	4	4.11	.49	.75
<b><u>Test Score Information</u></b>				
Cognitive Ability	50	25.76	5.79	.63
Biodata Test Score	122	86.33	13.97	.81
Random Response Scale	7	.22	.42	n/a
Self-deception	17	6.58	2.67	.
Impression Management	20	5.82	3.69	.

<sup>a</sup> coded 0 = female, 1 = male

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of the 15 cultural value sub-scales. The mean of each of the remaining items was computed in order to form a scale score. The items composing the final scale for each of the 15 cultural value alternatives are found in Appendix A. The revised coefficient alpha reliability estimates for the fifteen cultural value scales reported in Table 2 improved slightly over the original estimates (range: .55 to .78, mean = .69).

The twenty items created by the present author to assess racial identity strength originally exhibited an internal consistency reliability of  $\alpha = .83$ . Principal components analysis was used to examine the underlying factor structure of these items. This analysis suggested four interpretable factors. These factors, with item loadings, are presented in Table 3. The items composing these distinct factors were examined to determine factor labels and interpretation. The first factor appears to assess the construct of racial identity strength as originally conceived in this study. Namely, the first factor assesses the degree to which racial identity is perceived to be an important component of the individual's sense of self. The second factor seems to reflect an extreme preference for one's own racial group, or perhaps reflects a behavioral manifestation of racial identity strength. These items reflect the degree to which the individual avoids other racial groups in favor of one's own group. The third factor assesses personal meditation and reflection on the concept of race. The fourth factor appears less interpretable than the previous three factors. Although factors 2 and 3 represent potentially interesting constructs, the first factor best represents the construct of racial identity as intended in the present study. Two items were removed from this first factor following rational inspection of each item: "Generally I don't give much thought to racial issues", and "I believe we should de-emphasize racial differences". The internal consistency reliability of the remaining 8-item scale was .87. This factor was used in all further analyses as the measure of racial identity strength.

**Table 3:  
Principal Components Analysis of Racial Identity Strength**

Item	Factor			
	1	2	3	4
I am strongly committed to my racial group membership.	.79	.32	-.18	.09
Matters of race are very important to me.	.70	.14	.22	-.03
My race is an important part of who I am.	.69	.37	-.05	.08
I am proud to be a member of my race.	.66	.23	-.14	-.06
I think one's racial identity is an integral part of one's personality.	.62	.23	.12	.19
Generally, I don't give much thought to racial issues. (R)	.62	-.10	.46	.04
I rarely consider what race I am. (R)	.62	.06	-.12	.15
I strongly identify with members of my own race.	.60	.44	-.19	.23
I wish I were a member of some other race. (R)	.51	.27	.05	.43
I believe we should de-emphasize racial differences. (R)	.48	-.35	-.38	.28
If given the opportunity, I'd spend the vast majority of my time with members of my own racial group.	.27	.70	-.27	.16
I tend to socialize with members of my own racial group.	.13	.70	.00	.28
I consciously seek out members of my own race for social activities.	.32	.67	-.18	-.07
I generally feel the most "attached" to other members of my own race.	.31	.51	-.06	.41
I've never given much thought to the racial experiences of others. (R)	.16	-.25	.78	-.06
I've never really given much thought to what it would be like to be a member of some other race. (R)	-.07	-.06	.73	-.07
I generally value the opinions of individuals of my own racial identity more than I value the opinions of individuals of other racial groups.	.29	.45	-.46	-.05
As a youth, I was primarily exposed to individuals of my own racial group.	-.01	-.03	-.06	.74
Some people think I spend too much time acting like people of some race other than my own. (R)	.11	.16	.02	.71
I believe there are more positive characteristics associated with other races than my own. (R)	.10	.28	-.15	.35

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It is also important to note the low coefficient alpha for the seven item random response scale. This estimate is consistent with previous findings (e.g., Hough, 1990), and can be attributed to the low variability in responses to the scale.

The intercorrelations among the primary variables included in the study are presented in Table 4. Of particular importance are the intercorrelations of the 3 cultural value alternatives which are intended to assess 1 of the 5 cultural value orientations. For example, the Good, Mixed, and Evil subscales are all intended to assess the Human Nature orientation. These subscales could be viewed as representing a continuum of human nature. If these separate subscales were found to correlate highly with one another, it would be proper to combine the subscales (with reverse coding if needed) into a single composite scale. Inspection of Table 4 reveals that the 15 scales assessing cultural values have only low to moderate intercorrelations. Indeed, examining the intercorrelations for 2 scales at the opposite poles of a cultural value orientation, the absolute value of these correlation are all in the range of .1 to .34. This evidence of discriminant validity argues against combining any of the 3 scales assessing one of the 5 cultural value orientations into composite scales. Rather, the 15 scales assessing cultural values were examined separately for each of the analyses described below.

Intercorrelations across cultural value subscales assessing distinct cultural value orientations are also low to moderate. However, the intercorrelation between the Future and Doing subscales appears particularly strong ( $r = .61$ ). This seems sensible since the Future subscale assesses the degree to which the individual plans for future events, while the Doing subscale assesses the degree to which the individual is accomplishment-oriented. Accomplishment often requires significant planning abilities.

Several additional correlations are also noteworthy. A surprisingly high correlation was observed between cognitive ability and the Subjugation to Nature subscale ( $r = -.47$ ). It appears that individuals with lower cognitive ability are more likely



**Table 4:  
Variable Intercorrelations**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Race <sup>a</sup>	1.0													
2. Racial Identity Class. <sup>a</sup>	.93	1.0												
3. Racial Identity Strength	.60	.59	1.0											
4. Age	-.00	-.00	.05	1.0										
5. Sex	-.25	-.24	-.22	-.01	1.0									
6. Father Education	-.30	-.33	-.26	-.14	.10	1.0								
7. Mother Education	-.18	-.23	-.18	-.19	.09	.59	1.0							
8. Income	-.30	-.32	-.18	-.20	.24	.50	.42	1.0						
9. Cognitive Ability	-.42	-.43	-.38	-.02	.20	.19	.17	.14	1.0					
10. Evil	.17	.16	.17	-.12	.02	-.11	-.06	.07	.14	1.0				
11. Mixed	.35	.34	.38	-.09	-.11	-.14	-.07	-.20	.20	.27	1.0			
12. Good	.02	.05	.07	.12	-.02	-.14	-.06	-.15	-.01	.26	.18	1.0		
13. Subjugation	.42	.41	.40	.01	-.20	-.18	-.10	-.09	-.47	.39	.39	.05	1.0	
14. Harmony	.08	.08	.08	.03	-.04	-.09	-.04	-.14	-.01	.03	.25	.28	.15	1.0
15. Mastery	.12	.13	.19	-.06	.07	-.08	-.07	-.04	-.19	.36	.21	.07	.35	-.01
16. Past	.14	.13	.17	.01	.15	-.10	-.07	-.04	-.29	.42	.15	-.10	.42	.13
17. Present	.08	.08	.17	-.00	-.18	-.07	.08	.02	-.21	.21	.21	.19	.35	.24
18. Future	.24	.23	.15	-.05	-.09	-.15	-.02	-.12	-.11	.10	.41	.28	.19	.34
19. Being	-.06	.01	.03	.08	-.09	-.13	-.06	-.15	.05	-.04	.07	.25	.15	.36
20. Being-in-Becoming	.05	.10	.14	-.04	-.07	-.11	-.02	-.06	.01	.09	.18	.15	.10	.42
21. Doing	.21	.22	.20	.05	-.10	-.24	-.10	-.20	-.11	.02	.38	.37	.18	.45
22. Lineal	.29	.26	.27	.03	.10	-.27	-.18	-.07	-.30	.29	.19	.03	.43	.05
23. Collateral	.09	.09	.12	-.02	.07	-.10	.00	.04	-.11	.13	.10	.14	.28	.28
24. Individual	.02	.04	.16	-.01	-.12	-.09	-.09	-.02	-.07	-.02	.20	.18	.12	.23
25. Biodata Test	.16	.19	.08	.09	-.13	-.11	-.05	-.15	-.05	-.13	.18	.31	.11	.26
26. Random	.11	.12	.13	.04	-.11	-.01	-.03	.10	-.18	.03	-.01	-.12	.03	-.15
27. Self-deception	.24	.24	.14	.00	.05	-.16	-.12	-.11	-.12	.03	.17	.24	.05	.19
28. Impression	.15	.13	-.07	.07	-.04	-.16	-.11	-.17	.07	-.20	.04	.26	-.08	.17
29. Urbanicity	.47	.48	.31	.04	-.20	-.10	.01	-.11	-.28	.00	.03	-.07	.08	.05



**Table 4 (Cont'd)**

	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
15. Mastery	1.0														
16. Past	.36	1.0													
17. Present	.22	.14	1.0												
18. Future	.19	.07	.15	1.0											
19. Being	.00	-.04	.32	.11	1.0										
20. Being-in-Becoming	.12	.08	.29	.20	.53	1.0									
21. Doing	.12	-.03	.24	.61	.29	.22	1.0								
22. Lineal	.38	.55	.18	.28	-.02	-.02	.27	1.0							
23. Collateral	.35	.36	.27	.34	.21	.25	.24	.45	1.0						
24. Individual	-.13	-.12	.30	.13	.38	.39	.28	-.19	-.04	1.0					
25. Biodata Test	.06	.06	.10	.39	.08	.13	.49	.19	.17	.02	1.0				
26. Random	.08	.08	-.00	-.16	-.09	-.07	-.20	-.03	-.11	-.08	-.05	1.0			
27. Self-Deception	.08	-.02	.11	.18	.12	.13	.30	.12	.01	.00	.39	-.09	1.0		
28. Impression	.02	-.11	-.03	.20	.13	.02	.36	.12	.03	.00	.53	-.04	.42	1.0	
29. Urbanicity	.00	.00	-.06	.04	-.01	.07	.01	.07	.01	-.08	.09	.19	.09	.12	1.0

**a** coded 0 = White American, 1 = African American  
**b** coded 0 = female, 1 = male

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to endorse the notion that humans are at the whim of Nature. Another surprising correlation was found between overall scores on the biodata test, and the Impression Management subscale assessing socially desirable responding ( $r = .53$ ). Individuals who were likely to manage self-impressions were also likely to score highly on the biodata test (as evidenced by the police officer scoring key). This finding brings into question exactly what biodata instruments measure -- actual beliefs and experiences, or the individual's perceptions of the "correct" answer.

Evidence that the sample used in the present study is not unrepresentative of the larger population is found in the intercorrelations of dummy-coded race with the SES variables. Whites were more likely to have experienced greater household income during childhood, and their parents were more likely to receive more education than the parents of Blacks. Examination of the intercorrelation of cognitive ability with dummy-coded race provides further evidence that the sample used in this study is not considerably different from the general population -- consistent with Wonderlic database information (Wonderlic Personnel Test, Inc., 1992), Whites performed about one standard deviation better on the Wonderlic than Blacks ( $r = -.42$ ). Cognitive ability scores do not appear to be strongly related to overall score on the biodata test ( $r = -.05$ ).

#### *Descriptive Information Summary*

Although the coefficient alphas of some cultural value scales were quite low, factor analysis and rational deletion of items was used to improve scale internal consistency estimates considerably. The coefficient alpha reliability estimates of each of the scales reported in Table 2 appears sufficient for use in scientific inquiry.

Inspection of Table 4 provides evidence that the scales were measured appropriately. Evidence of discriminant validity across subscales of the cultural value orientations argues against the formation of composite scales. Further, the sample used in

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the present study reflects societal findings that Blacks, relative to Whites in American society, tend to have parents with less education and earnings.

### Demographically Determined Race and Racial Identity Classification

Hypothesis 1 asserts that racial identity classification will be moderately related to a single item measure of self-reported race. Table 4 reveals a strikingly high correlation was found between dummy coded race, and dummy coded racial identity classification ( $r = .93$ ). Further inspection of the data revealed that of the 108 participants indicating they considered themselves demographically as White, 106 were classified as possessing a White American racial identity. Only 2 of these individuals were classified as possessing an African American racial identity. Similarly, of the 99 participants indicating they considered themselves demographically as Black, 97 were classified as possessing an African American racial identity. Only 2 of these individuals were classified as possessing an White American racial identity. In contrast to Hypothesis 1's expectations for a moderate relationship between demographic race and racial identity classification, the 2 variables appear nearly identical.

Hypothesis 2 asserts that racial identity classification would explain more variance in cultural values than would demographic race. In order to determine whether this hypothesis was supported, the significance of differences in correlations between each of the variables with each of the fifteen cultural value scales were examined using the procedure recommended by Downie and Heath (1970). The results of this examination are presented in Table 5. This table illustrates that there are no significant differences in the correlations between demographically-determined race and racial identity classification with any of the cultural value scales, with the exception of a single pair of correlations (Being), both of which were near zero. This evidence indicates that,

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**Table 5:**  
**Correlation of Race and Racial Identity Classification**  
**with Cultural Values**

<u>Cultural Value Scale</u>	<u>Demographic Race</u>	<u>Racial Identity Classification</u>
Evil	.17	.16
Mixed	.35	.34
Good	.02	.05
Subjugation	.42	.41
Harmony	.08	.08
Mastery	.12	.13
Past	.14	.13
Present	.08	.08
Future	.24	.23
Being	-.06	.01*
Being-in-Becoming	.05	.10
Doing	.21	.22
Lineal	.29	.26
Collateral	.09	.09
Individual	.02	.04

\* indicates a significantly different correlation between measures of demographic status and cultural value measure ( $p < .05$ )

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at least for this sample, assessing psychological racial identity provides little additional information over a single item demographic response. Therefore, there was no empirical support for Hypothesis 2. Given the traditional concern in both psychological assessment and selection hiring to consider self-reported race, all further analyses in the present study requiring grouping by race were based upon the single item measure of self-reported race.

### *Summary*

A higher than expected correlation was found between demographic race and psychological racial identity classification ( $r = .93$ ). Due to this finding, the expectation that an individual's adoption of cultural values would be more strongly related to classification based on their psychological racial identity rather than mere demographic characteristics did not receive empirical verification. Neither Hypothesis 1 nor 2 received complete support. Given the customary use of self-reported race for the racial classification of individuals in psychological research, all further analyses requiring racial subgroups used a single item measure of self-reported race as the grouping variable.

### **Race and Background Information**

Differences in background information across the two racial subgroups were examined using independent-samples t-tests. The means and standard deviations for both Black and White racial subgroups for each of the following t-tests are reported in Table 6. A listing of the actual items and response options used to assess background information is available in Appendix A.

Although no difference was detected in the average ages of these two groups ( $t(185) = .04, p > .05$ ), White participants were less likely to be female than were Black participants ( $t(204) = 3.72, p < .01$ ). Whites scored significantly more highly than Blacks on each of the socioeconomic variables. Whites were more likely to be raised with a

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**Table 6:  
Results of t-tests Examining Race and Background Information**

<b>Variable</b>	<b>Black</b>		<b>White</b>	
	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>
Age	20.18	1.70	20.19	2.49
Sex*	.23	.42	.47	.50
Household Income*	3.35	1.47	4.27	1.46
Father's Education*	3.87	1.23	4.62	1.16
Mother's Education*	4.11	1.11	4.50	1.03
Urbanicity*	3.45	.70	2.67	.77
Cognitive Ability*	20.80	5.00	25.76	5.79
Cog. Ability adjusted for SES*	20.88	5.00	25.75	5.79
Overall Biodata Score*	90.77	14.09	86.33	13.97
Self-Deception*	7.89	2.52	6.58	2.67
Impression Management*	6.90	3.35	5.82	3.69
Random Response Scale*	.44	.65	.25	.48
Racial Identity Strength*	4.22	.56	3.34	.60

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\* indicates significant difference between racial subgroups,  $p < .05$

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higher family income, ( $t(202) = 4.49, p < .01$ ). Whereas Blacks on average reported their annual household income during childhood as just above the \$35,000 - \$44,999 range, Whites on average reported their childhood household income to be just above the \$45,000 to \$59,999 range. The fathers of White participants were on average more educated than their Black counterparts ( $t(220) = 4.51, p < .01$ ), and the mothers of White participants were generally more educated than Black participants, ( $t(200) = 2.61, p < .05$ ). Blacks generally reported fathers with education less than "some college" and mother's education to be just above "some college", Whites generally reported that their fathers and mothers had received "some college". Blacks were more likely to have been raised in urban areas than Whites ( $t(204) = -7.59, p < .01$ ). Whereas Whites on average reported growing up in towns of somewhere between 2,000 and 100,000 people, Blacks on average reported growing up in cities composed of between 10,000 and 100,000 people.

A significant difference was also detected in the cognitive ability scores for the two racial groups,  $t(203) = 6.61, p < .01$ , with Whites outperforming Blacks on this test. Even after statistically controlling for the effects of parental education and income, Whites were found to score significantly higher on the Wonderlic ( $\Delta R^2 = .14, F(1,202) = 35.32, p < .01$ ). In contrast, Blacks outperformed Whites on the biodata test rationally scored for the job of police officer, ( $t(203) = -2.27, p < .05$ ).

Blacks also scored significantly more highly on both the self-deception and impression management subscales assessing social desirability ( $t(205) = -3.55, p < .01$  and  $t(205) = -2.19, p < .05$ , respectively). Prior to deletion of cases who responded carelessly, Whites and Blacks differed significantly in responses to the random response scale ( $t(193) = -2.44, p < .05$ ), indicating that Blacks were more careless in their responding than Whites. This difference evaporated following the discarding of cases with more than two random responses. Finally, the importance of racial identity was found to be significantly more meaningful for Blacks than for Whites ( $t(205) = -10.87, p < .01$ ).

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### *Summary*

Blacks and Whites were found to differ on a number of variables. Black participants tended to be female more often than White participants. Whites outscored Blacks on each of the socioeconomic variables, and were more likely to have been raised in an urban environment. While Whites had a higher average score on the 50 item Wonderlic Personnel Test, Blacks outscored Whites on the overall biodata test. Blacks were also found to score more highly on both the self-deception and impression management subscales of the social desirability measure. Finally, Blacks were found to be more concerned with racial identity than Whites.

### Cultural Value Patterns & Racial Subgroup

Carter (1990) found the cultural value patterns of Black and White college students to be highly similar. Hypothesis 3 similarly posits the preferential ordering of the 3 cultural value alternatives for a particular cultural value orientation will be equivalent for both Blacks and Whites. Note that examination of this hypothesis requires confirming the null hypothesis. Therefore, this hypothesis is considered exploratory, and is meant to illustrate the similarity in the patterning of cultural values across the two racial subgroups. The hypothesized cultural value patterns in Hypothesis 3 are based on theory of cultural values. These theory-based hypothesized patterns differ from some of Carter's (1990) empirical findings. This hypothesis is therefore further useful as an examination of theoretical cultural value patterns vs. previous empirical findings.

In order to assess the cultural value orientation patterns for a particular racial subgroup, paired samples t-tests were conducted between each of the 3 cultural value alternative scales assessing a single cultural value orientation. For example, in order to examine Blacks' preference for the Good, Mixed, and Evil alternatives of the Human

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Nature orientation, several steps were followed. First, data records were selected only for those individuals who designated themselves as Black. Second, paired samples t-tests examined the preferential endorsement of the Good, Mixed, and Evil subscales of the Human Nature orientation. Finally, a cultural value pattern for the Human Nature orientation was formed by placing a greater than sign (e.g., >) between any 2 scales which differed significantly, and an equal sign (e.g., =) between those scales which did not differ significantly. This analysis was repeated for the remaining cultural value orientations of Person-Nature, Time, Activity, and Relations. Each of these analyses was then repeated, selecting only those individuals who reported a demographic classification of White.

Table 7 presents the means, standard deviations, and significant differences across the 5 cultural value orientations for Blacks. Table 8 does the same for Whites. The cultural value patterns across the 5 value orientations of Human Nature, Person-Nature, Time, Activity, & Relations for both Blacks and Whites are presented in Table 9. Inspection of Table 9 reveals a replication of Carter's (1990) findings that Blacks and Whites share nearly identical cultural value patterns. This expectation is consistent with hypothesis 3. However, the cultural value patterns presented in Table 9 are more consistent with Carter's (1990) findings than with the theoretical expectations reflected in hypothesis 3. Specifically, based on theoretical grounds, it was posited that the typical American's view of Human Nature would place greater emphasis on the Evil alternative than the Good alternative. As seen in Table 9, although both Blacks and Whites agreed that the Mixed orientation was very important, both groups placed greater emphasis on the Good alternative than the Evil alternative. The Person-Nature orientation of both racial subgroups also failed to support theoretical speculation. Although the Mastery alternative was expected to be most highly valued by typical Americans, both racial subgroups had a strong preference for the Harmony with Nature alternative, followed by

**Table 7:**  
**Results of t-test Comparisons of Cultural Value Alternatives – Blacks**

<u>Human Nature Orientation</u>	<u>Mean</u>	<u>SD</u>
Evil	2.97	.60
Mixed	4.00	.35
Good	3.80	.48
Evil vs. Mixed:	t(98) = -16.14, p < .01	
Evil vs. Good:	t(98) = -9.45, p < .01	
Mixed vs. Good:	t(98) = 3.74, p < .01	
<u>Person - Nature Orientation</u>	<u>Mean</u>	<u>SD</u>
Subjugation	3.42	.55
Harmony	3.67	.41
Mastery	2.90	.49
Subjug. vs. Harmony:	t(98) = -4.30, p < .01	
Subjug. vs. Mastery:	t(98) = 8.20, p < .01	
Harmony vs. Mastery:	t(98) = 12.28, p < .01	
<u>Time Orientation</u>	<u>Mean</u>	<u>SD</u>
Past	2.56	.57
Present	3.59	.48
Future	3.71	.49
Past vs. Present:	t(98) = -15.10, p < .01	
Past vs. Future:	t(98) = -15.65, p < .01	
Present vs. Future:	t(98) = -2.06, p < .05	
<u>Activity Orientation</u>	<u>Mean</u>	<u>SD</u>
Being	3.64	.44
Being-in-Becoming	3.59	.46
Doing	3.94	.42
Being vs. Being-in-Bec.:	t(98) = 1.13, p > .05	
Being vs. Doing:	t(98) = -6.10, p < .01	
Being-in-Bec. vs. Doing:	t(98) = -6.02, p < .01	
<u>Relations Orientation</u>	<u>Mean</u>	<u>SD</u>
Lineal	2.85	.48
Collateral	3.14	.47
Individual	4.14	.49
Lineal vs. Collat.:	t(98) = -5.64, p < .01	
Lineal vs. Individ.:	t(98) = -17.44, p < .01	
Collat. vs. Individ.:	t(98) = -15.04, p < .01	

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**Table 8:**  
**Results of t-tests Comparisons Between Cultural Value Alternatives -- Whites**

<u>Human Nature Orientation</u>	<u>Mean</u>	<u>SD</u>
Evil	2.78	.52
Mixed	3.71	.42
Good	3.78	.41

Evil vs. Mixed:  $t(107) = -19.88, p < .01$   
 Evil vs. Good:  $t(107) = -14.11, p < .01$   
 Mixed vs. Good:  $t(107) = -1.41, p > .05$

<u>Person - Nature Orientation</u>	<u>Mean</u>	<u>SD</u>
Subjugation	2.90	.60
Harmony	3.60	.42
Mastery	2.77	.52

Subjug. vs. Harmony:  $t(107) = -9.87, p < .01$   
 Subjug. vs. Mastery:  $t(107) = 2.16, p > .05$   
 Harmony vs. Mastery:  $t(107) = 12.52, p < .01$

<u>Time Orientation</u>	<u>Mean</u>	<u>SD</u>
Past	2.41	.50
Present	3.51	.49
Future	3.50	.38

Past vs. Present:  $t(107) = -17.37, p < .01$   
 Past vs. Future:  $t(107) = -18.53, p < .01$   
 Present vs. Future:  $t(107) = .17, p > .05$

<u>Activity Orientation</u>	<u>Mean</u>	<u>SD</u>
Being	3.69	.43
Being-in-Becoming	3.54	.46
Doing	3.75	.44

Being vs. Being-in-Bec.:  $t(107) = 3.57, p < .01$   
 Being vs. Doing:  $t(107) = -1.29, p > .05$   
 Being-in-Bec. vs. Doing:  $t(107) = -4.01, p < .01$

<u>Relations Orientation</u>	<u>Mean</u>	<u>SD</u>
Lineal	2.56	.49
Collateral	3.06	.43
Individual	4.11	.50

Lineal vs. Collat.:  $t(98) = -10.93, p < .01$   
 Lineal vs. Individ.:  $t(98) = -20.67, p < .01$   
 Collat. vs. Individ.:  $t(98) = -15.46, p < .01$

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**Table 9:  
Cultural Value Patterns for Blacks and Whites**

<u>Value Orientation</u>	<u>Blacks</u>	<u>Whites</u>
Human Nature:	Mixed>Good>Evil	Mixed=Good>Evil
Person - Nature:	Harmony>Subjug.>Mastery	Harmony>Subjug.>Mastery
Time:	Present=Future>Past	Present=Future>Past
Activity:	Doing>Being=Being-in-Bec.	Being=Doing>Being-in-Bec.
Relations:	Individual>Collat.>Lineal	Individual>Collat.>Lineal

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N = 108 Whites

N = 99 Blacks

> denotes significant difference ( $p < .05$ ) between mean scale scores

= denotes no significant difference ( $p > .05$ ) between mean scale scores

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the Subjugation to Nature viewpoint. Neither group endorsed the Mastery alternative as highly as these other alternatives. Both racial subgroups shared the same patterning for alternatives to the Time orientation. Once again, however, the pattern produced failed to perfectly support theory. Despite the expectation that the typical American would endorse the Future alternative more highly than the Past or Present alternatives, endorsement of the Future alternative did not differ significantly from endorsement of the Present alternative. The patterns for the Activity orientation were the most interesting. Blacks and Whites did not share the same patterning of cultural value alternatives. Although as expected both groups placed a large degree of emphasis on the Doing alternative, the White group surprisingly placed an equally great emphasis on the Being alternative. The patterns for the Relation orientation were consistent with expectations based on theory. Both groups preferred the Individual alternative over both the Collateral and Lineal alternatives. Hypothesis 3, therefore, received only partial support.

### *Summary*

As proposed in hypothesis 3, Blacks and Whites were found to share highly similar cultural value patterns. However, the cultural value patterns produced by these groups were in some cases not consistent with theory. Taken together, these findings replicate similar findings by Carter (1990).

### Cultural Value Differences Between Racial Subgroups

Hypothesis 4 argues that racial subgroups will differentially endorse various cultural value alternatives. In order to test this hypothesis, univariate statistics were initially attempted. These findings are discussed below. Hypothesis 4 was then further investigated using hierarchical regression in order to statistically control for variables which might provide alternative explanations for the univariate results.

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### *Univariate Analyses*

Racial subgroup differences in the preferences for particular cultural values were initially examined using t-tests. The means, standard deviations, and t-values are reported in Table 10. Consistent with hypothesis 4, Blacks were more likely than Whites to endorse the cultural value alternatives of Subjugation to Nature from the Person-Nature orientation, the Past alternative of the Time orientation, and the Lineal alternative of the Relations orientation. Contrary to the hypothesis, however, Blacks also outscored Whites on the Evil alternative of the Human Nature orientation, Future alternative of the Time orientation, and Doing alternative of the Activity orientation. It was thought that these three cultural value alternatives would be endorsed more strongly by Whites. Although Blacks were also more likely to endorse the Mixed alternative of the Human Nature orientation, no a priori expectations existed for this cultural value alternative.

Given the possible influence a large sample size may have on the determination of statistical significance when using t-tests, hypothesis 4 was further investigated using Cohen's (1977) definition of a small effect size to determine statistical significance. Specifically, any mean difference between the 2 racial sub-groups on a particular cultural value that exceeded .2 standard deviations was judged to be significant. Using this criterion with subgroup N's equal to 100, a difference of .2 standard deviations or larger would occur with a probability approximately equal to or less than .02. This procedure identified the same 7 significant differences in endorsement of cultural values between Blacks and Whites as previously identified by the t-tests. Thus, sample size did not unduly influence the determination of subgroup differences.

### *Hierarchical Regression Analyses*

Although Blacks endorsed certain cultural values more strongly than Whites, there are several possible explanations for this finding other than cultural value differences. First, it is possible that this finding merely reflects differences attributable to

**Table 10:**  
**Results of t-test Comparisons of Cultural Value Differences by Race**

<b>Cultural Value</b>	<b>Black Mean</b>	<b>Black SD</b>	<b>White Mean</b>	<b>White SD</b>	<b>t-test</b>
<i>Human Nature</i>					
Evil	2.97	.60	2.78	.52	t(194) = -2.51, p<.05
Mixed	4.00	.35	3.71	.42	t(203) = -5.35, p<.01
Good	3.80	.48	3.78	.41	t(192) = -.31, p>.05
<i>Person-Nature</i>					
Subjugation	3.42	.55	2.90	.60	t(205) = -6.60, p<.01
Harmony	3.67	.41	3.60	.42	t(204) = -1.11, p>.05
Mastery	2.90	.49	2.77	.52	t(205) = -1.77, p>.05
<i>Time</i>					
Past	2.56	.57	2.41	.50	t(196) = -2.08, p<.05
Present	3.59	.48	3.51	.49	t(204) = -1.14, p>.05
Future	3.71	.49	3.50	.38	t(185) = -3.48, p<.01
<i>Activity</i>					
Being	3.64	.44	3.69	.43	t(203) = .79, p>.05
Being-in-Becoming	3.59	.46	3.54	.46	t(204) = -.71, p>.05
Doing	3.94	.42	3.75	.44	t(204) = -3.09, p<.01
<i>Relations</i>					
Lineal	2.85	.48	2.56	.49	t(204) = -4.43, p<.01
Collateral	3.14	.47	3.06	.43	t(199) = -1.32, p>.05
Individual	4.14	.49	4.11	.50	t(204) = -.33, p>.05

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socioeconomic status between the two racial groups. Second, it is also possible that the strength of an individual's sense of racial identity may further explain the adoption of certain cultural values. To investigate these possibilities, hierarchical regression was used. Specifically, a score on one of the 15 cultural value scales was initially regressed on income and parental education. This step was intended to statistically control for the effects of socioeconomic status. In the second step, the cultural value alternative was regressed on dummy coded race. A significant change in  $R^2$  at this point indicates that race explains additional variance in the cultural value alternative over that explained by socioeconomic status. In a third step, strength of racial identity entered the equation. A significant change in  $R^2$  at this step indicates that the degree of importance an individual places on racial identity influences endorsement of cultural values beyond race and SES. In the final step, the cultural value alternative was regressed on the interaction of race by racial identity strength. A significant change in  $R^2$  at this final step indicates that the influence of racial identity on endorsement of a cultural value is dependent upon the individual's race. Table 11 presents the results of these regressions.

Close inspection of Table 11 reveals that when the cultural values are regressed on race following the addition of socio-economic variables, race explains unique variance for 6 of the cultural value alternatives. This finding replicates the above t-tests in which racial differences were detected in the preference for the Evil, Mixed, Subjugation, Past, Future, and Lineal cultural value alternatives. As discussed above, only the findings that Blacks were more likely to support the Subjugation, Past, and Lineal alternatives supports Hypothesis 4. However, unlike the previous analysis, the Doing alternative failed to explain a significant portion of unique variance, following the addition of socioeconomic variables.

When entered into the regression equation following the addition of race and the socioeconomic variables, the strength of an individual's racial identity added significantly

**Table 11:**  
**Results of Hierarchical Regression Analyses with Cultural Values**  
**Regressed on SES, Race, and Racial Identity Strength**

<i>DV is Evil</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
<b>STEP 1:</b>				
Income	.06	.03	.03	.03
Mother Educ.	-.01	.05		
Father Educ.	-.08	.04		
<b>STEP 2:</b>				
Dummy-coded Race	.22	.08	.06*	.03*
<b>STEP 3:</b>				
Racial Identity Str.	.06	.07	.07*	.00
<b>STEP 4:</b>				
Race*RIStr. Int.	-.18	.14	.08*	.01
<i>DV is Mixed</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
<b>STEP 1:</b>				
Income	-.05	.02	.04*	.04*
Mother Educ.	.02	.03		
Father Educ.	-.03	.03		
<b>STEP 2:</b>				
Dummy-coded Race	.26	.06	.13*	.09*
<b>STEP 3:</b>				
Racial Identity Str.	.16	.05	.18*	.04*
<b>STEP 4:</b>				
Race*RIStr. Int.	.02	.09	.18*	.00
<i>DV is Good</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
<b>STEP 1:</b>				
Income	-.04	.02	.03	.03
Mother Educ.	.02	.04		
Father Educ.	-.04	.03		
<b>STEP 2:</b>				
Dummy-coded Race	-.04	.07	.03	.00
<b>STEP 3:</b>				
Racial Identity Str.	.05	.05	.04	.00
<b>STEP 4:</b>				
Race*RIStr. Int.	.12	.11	.04	.01

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**Table 11 (cont'd):***DV is Subjugation*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	-.00	.03	.03	.03
Mother Educ.	.01	.05		
Father Educ.	-.09	.05		
STEP 2:				
Dummy-coded Race	.52	.09	.18*	.15*
STEP 3:				
Racial Identity Str.	.19	.07	.21*	.03*
STEP 4:				
Race*RI Str. Int.	-.21	.14	.22*	.01

*DV is Harmony*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	-.04	.02	.02	.02
Mother Educ.	.02	.03		
Father Educ.	-.01	.03		
STEP 2:				
Dummy-coded Race	.03	.06	.02	.00
STEP 3:				
Racial Identity Str.	.03	.05	.02	.00
STEP 4:				
Race*RI Str. Int.	.03	.10	.02	.00

*DV is Mastery*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	.00	.03	.01	.01
Mother Educ.	.01	.04		
Father Educ.	-.04	.04		
STEP 2:				
Dummy-coded Race	.11	.08	.02	.01
STEP 3:				
Racial Identity Str.	.12	.06	.04	.02*
STEP 4:				
Race*RI Str. Int.	-.37	.12	.08*	.04*

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\* indicates  $p < .05$

**Table 11 (cont'd):**

<i>DV is Past</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	.00	.03	.01	.01
Mother Educ.	-.01	.04		
Father Educ.	-.04	.04		
STEP 2:				
Dummy-coded Race	.14	.08	.02	.02*
STEP 3:				
Racial Identity Str.	.09	.06	.04	.01
STEP 4:				
Race*RI Str. Int.	-.01	.13	.04	.00
<i>DV is Present</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	.02	.03	.03	.03
Mother Educ.	.08	.04		
Father Educ.	-.08	.04		
STEP 2:				
Dummy-coded Race	.07	.07	.03	.00
STEP 3:				
Racial Identity Str.	.13	.06	.06*	.02*
STEP 4:				
Race*RI Str. Int.	-.08	.12	.06	.00
<i>DV is Future</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	-.02	.02	.04	.04
Mother Educ.	.05	.04		
Father Educ.	-.07	.03		
STEP 2:				
Dummy-coded Race	.18	.06	.07*	.04*
STEP 3:				
Racial Identity Str.	.01	.05	.07*	.00
STEP 4:				
Race*RI Str. Int.	-.03	.11	.07*	.00

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**Table 11 (cont'd):**

<i>DV is Being</i> <b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	-.03	.02	.03	.03
Mother Educ.	.02	.03		
Father Educ.	-.03	.03		
STEP 2:				
Dummy-coded Race	-.11	.06	.04	.01
STEP 3:				
Racial Identity Str.	.06	.05	.05	.01
STEP 4:				
Race*RI Str. Int.	.13	.24	.06	.01
<i>DV is Being-in-Becoming</i> <b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	-.00	.03	.01	.01
Mother Educ.	.03	.04		
Father Educ.	-.05	.03		
STEP 2:				
Dummy-coded Race	.02	.07	.01	.00
STEP 3:				
Racial Identity Str.	.10	.06	.03	.02
STEP 4:				
Race*RI Str. Int.	.17	.11	.04	.01
<i>DV is Doing</i> <b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	-.04	.02	.07*	.07*
Mother Educ.	.04	.03		
Father Educ.	-.08	.03		
STEP 2:				
Dummy-coded Race	.12	.06	.09*	.02
STEP 3:				
Racial Identity Str.	.06	.05	.09*	.01
STEP 4:				
Race*RI Str. Int.	.01	.10	.09*	.00

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Table 11 (cont'd):

<i>DV is Linear</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	.03	.03	.08*	.08*
Mother Educ.	-.02	.04		
Father Educ.	-.12	.04		
STEP 2:				
Dummy-coded Race	.26	.07	.14*	.06*
STEP 3:				
Racial Identity Str.	.08	.06	.15*	.01
STEP 4:				
Race*RIStr. Int.	-.31	.11	.18*	.03*
<i>DV is Collateral</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	.03	.03	.02	.02
Mother Educ.	.03	.04		
Father Educ.	-.07	.03		
STEP 2:				
Dummy-coded Race	.08	.07	.03	.01
STEP 3:				
Racial Identity Str.	.05	.05	.03	.00
STEP 4:				
Race*RIStr. Int.	-.12	.11	.04	.01
<i>DV is Individual</i>				
<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>R<sup>2</sup></b>	<b>ΔR<sup>2</sup></b>
STEP 1:				
Income	.01	.03	.01	.01
Mother Educ.	-.03	.04		
Father Educ.	-.03	.04		
STEP 2:				
Dummy-coded Race	.00	.07	.01	.00
STEP 3:				
Racial Identity Str.	.15	.06	.04	.03*
STEP 4:				
Race*RIStr. Int.	.33	.12	.08*	.04*

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\* indicates  $p < .05$

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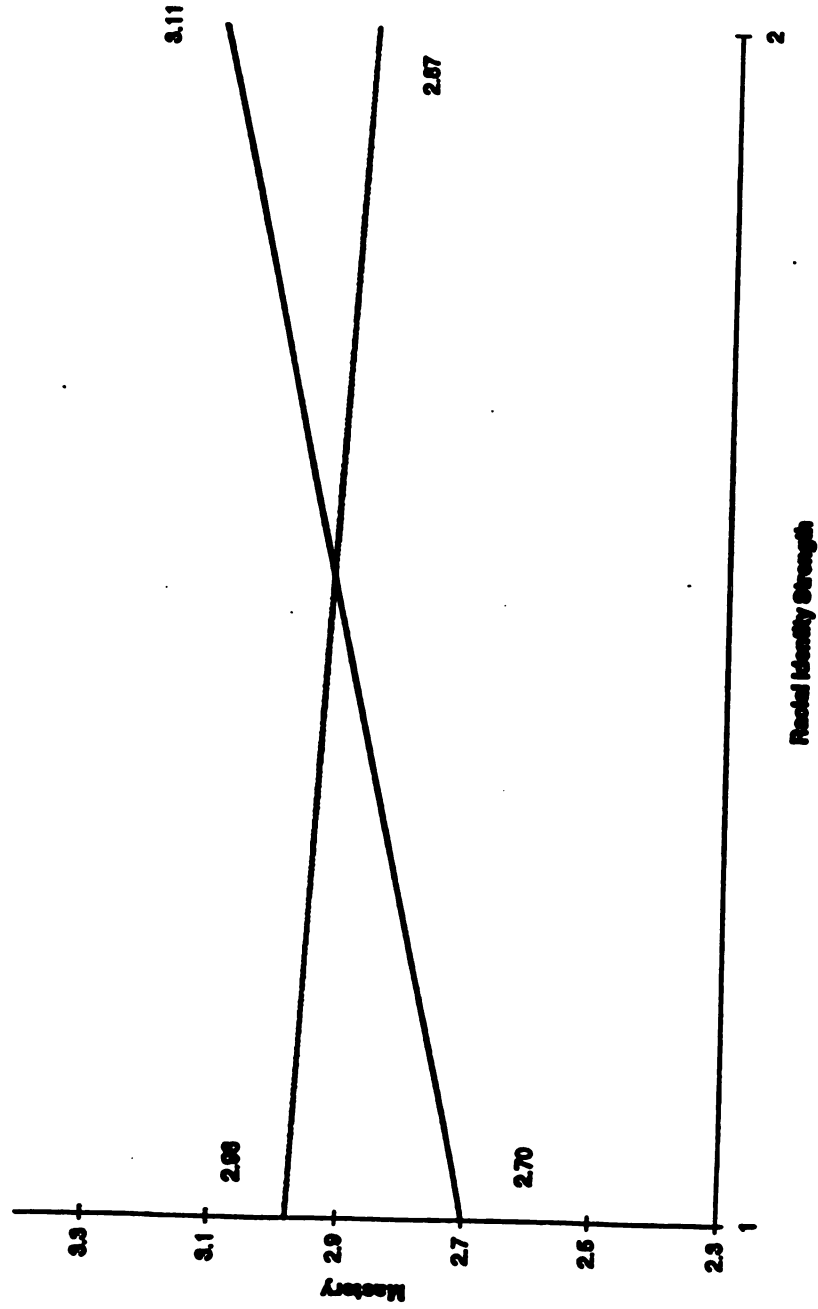
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to the prediction of the cultural values of Mixed, Subjugation, Mastery, Present, and Individual. That is, even after taking the effects of socioeconomic status and race into account, the degree to which race was important to the individual helped to provide additional information concerning the adoption of these cultural values. Finally, the adoption of three cultural values was best explained by examination of the race by racial identity strength interaction. This interaction added a significant degree of predictability for the cultural values of Mastery, Lineal, and Individual. These three interactions are presented in Figures 2, 3, and 4, respectively.

Figures 2, 3, and 4 were constructed by plotting the average endorsement of a specific cultural value for both racial groups one standard deviation above and below the mean response on racial identity strength. Examination of Figure 2 yields evidence supporting hypothesis 4. As racial identity strength increases, Blacks tend to decrease their endorsement of the Mastery cultural value alternative. In contrast, Whites who are higher in racial identity are more likely to endorse the notion that humans are meant to control Nature. Figure 3 fails to provide support for the hypothesis that Blacks who are high in racial identity are more likely to endorse an authoritative, Lineal view on human relations. Although this figure suggests that Blacks who are low in racial identity are much more likely than a similar group of Whites to endorse this alternative, the two racial groups converge in their endorsement of the Lineal alternative as perceived racial identity increases in importance. The race by racial identity strength interaction for the Individual alternative also fails to support the hypothesis (see Figure 4). Although Blacks were expected to be less likely to endorse the Individual alternative as racial identity strength increased, this group was actually more likely to endorse the Individual alternative as the importance of racial identity increased. The endorsement of Individualism by Whites, on the other hand, was uninfluenced by the degree of importance of racial identity strength.



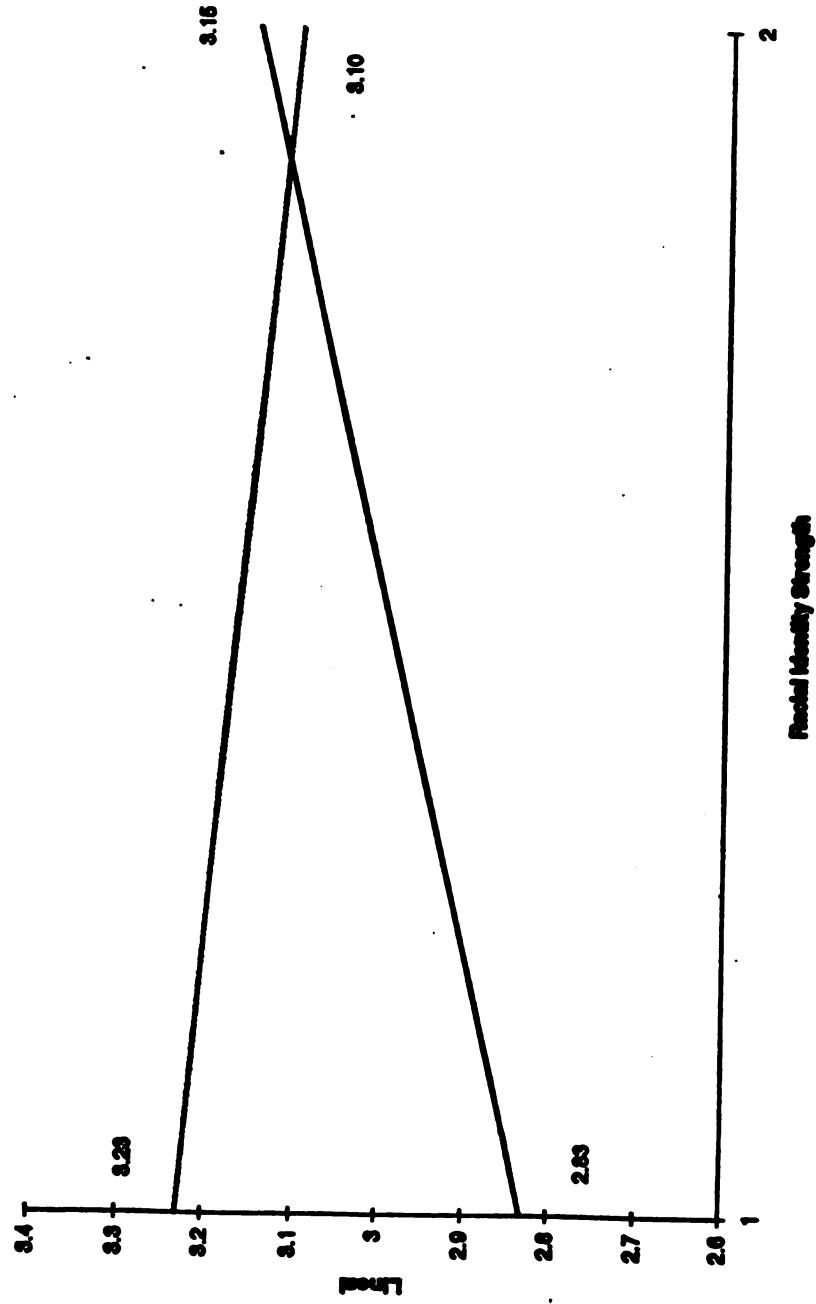
**Figure 2:  
Interaction of Racial Identity Strength & Race when DV is Mastery**



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— Black



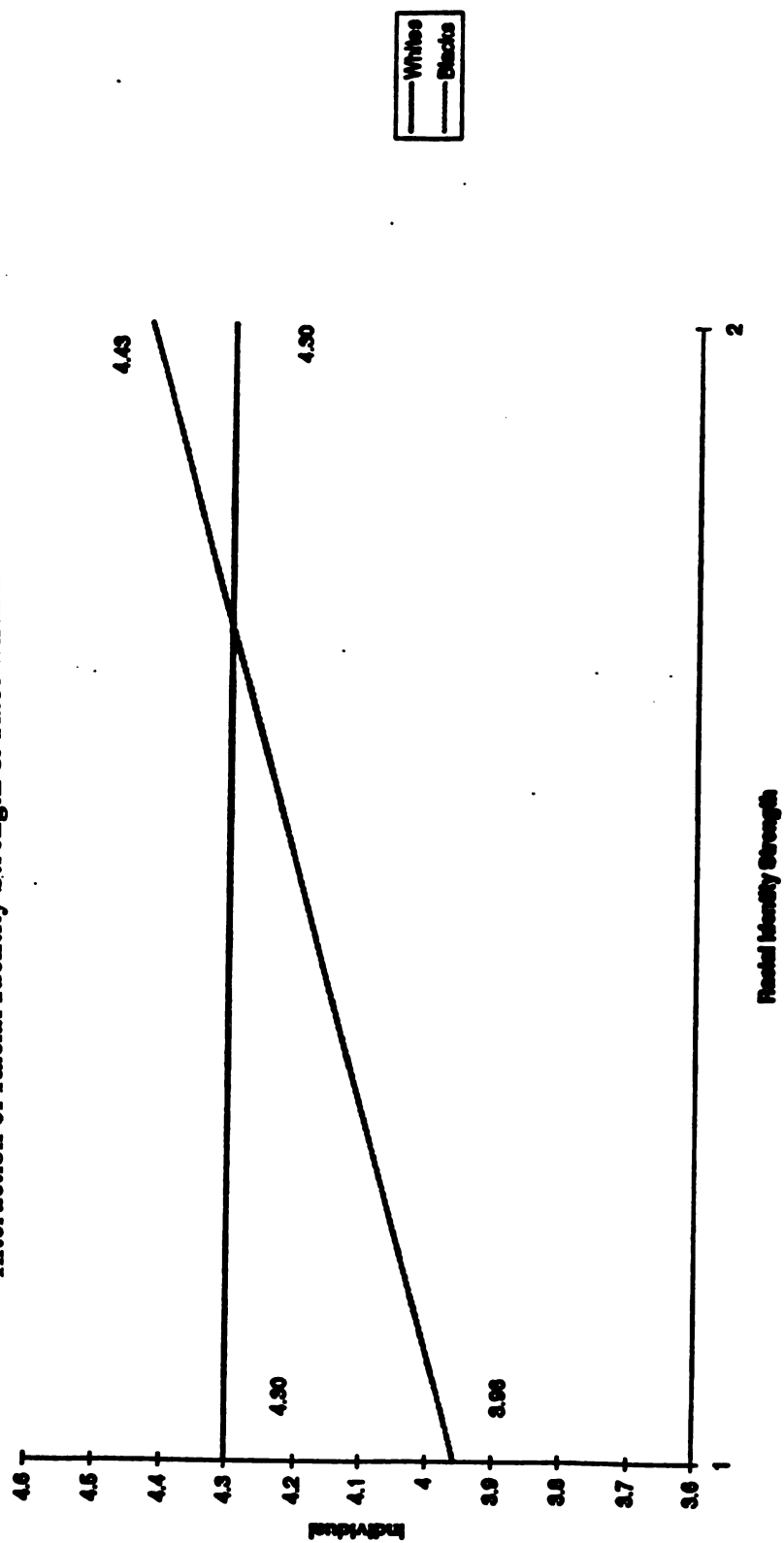
**Figure 3:**  
**Interaction of Racial Identity Strength & Race when DV is Lineal**



— White  
 - - Black



**Figure 4:**  
**Interaction of Racial Identity Strength & Race when DV is Individual**



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While it does seem that Blacks and Whites differ on their preferential endorsement of several cultural values, these preferences are complex and in some cases inconsistent with theory. As hypothesized, Blacks are more likely to adopt the cultural values of a Subjugation to Nature and the Past Time orientation. Also consistent with hypothesis 4 is the finding that Blacks who are high in racial identity are less likely than a similarly highly racially identified group of Whites to endorse the Mastery over nature orientation. However, contrary to the hypothesis, Blacks were more likely than Whites to endorse an Evil view of basic human nature and a future time orientation. Further, in contrast to expectations, Blacks who felt their racial identity was an important part of their lives were less likely than those with low racial identity to endorse a Lineal perspective of human relations. Rather, Blacks high in racial identity strength were more likely to endorse an Individual view of human relations. Table 12 provides a summary of these findings. Hypothesis 4 clearly received only mixed support from the data.

Is it possible that the observed cultural value differences merely reflect differences in socially desirable responding between racial subgroups? This question is raised by the finding that Blacks were more likely than Whites to respond in a socially desirable manner. In order to test the possibility that Blacks endorsed cultural values more frequently as a result of the desire to respond in a socially acceptable manner, a final set of hierarchical regressions were performed. In these regressions, a cultural value alternative was initially regressed on SES, then the 2 social desirability scales, followed by dummy coded race, then racial identity strength, and finally, the interaction of race and racial identity strength. These regressions were performed using each of the 15 cultural value alternatives as dependent variables. The interpretation of these regressions was identical to that discussed above. The desire to respond in a socially acceptable manner did not influence the relationship between race and endorsement of cultural values.

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**Table 12:  
Summary of Racial Group  
Preferences for Cultural Values**

<b><u>Cultural Value</u></b>	<b><u>Group Preferring this Cultural Value</u></b>
<b>Evil</b>	Blacks
<b>Mixed</b>	Blacks
<b>Good</b>	No difference in endorsement
<b>Subjugation*</b>	Blacks
<b>Harmony</b>	No difference in endorsement
<b>Mastery*</b>	Whites with high racial identity
<b>Past*</b>	Blacks
<b>Present</b>	No difference in endorsement
<b>Future</b>	Blacks
<b>Being</b>	No difference in endorsement
<b>Being-in-Becoming</b>	No difference in endorsement
<b>Doing</b>	No difference in endorsement, after controlling for SES
<b>Lineal</b>	Blacks low in racial identity strength; convergence high in racial identity str.
<b>Collateral</b>	No difference in endorsement
<b>Individual</b>	Whites low in racial identity strength; Blacks very high in racial identity strength

**\* indicates the finding is consistent with theory-based expectations of racial subgroup differences in cultural values**

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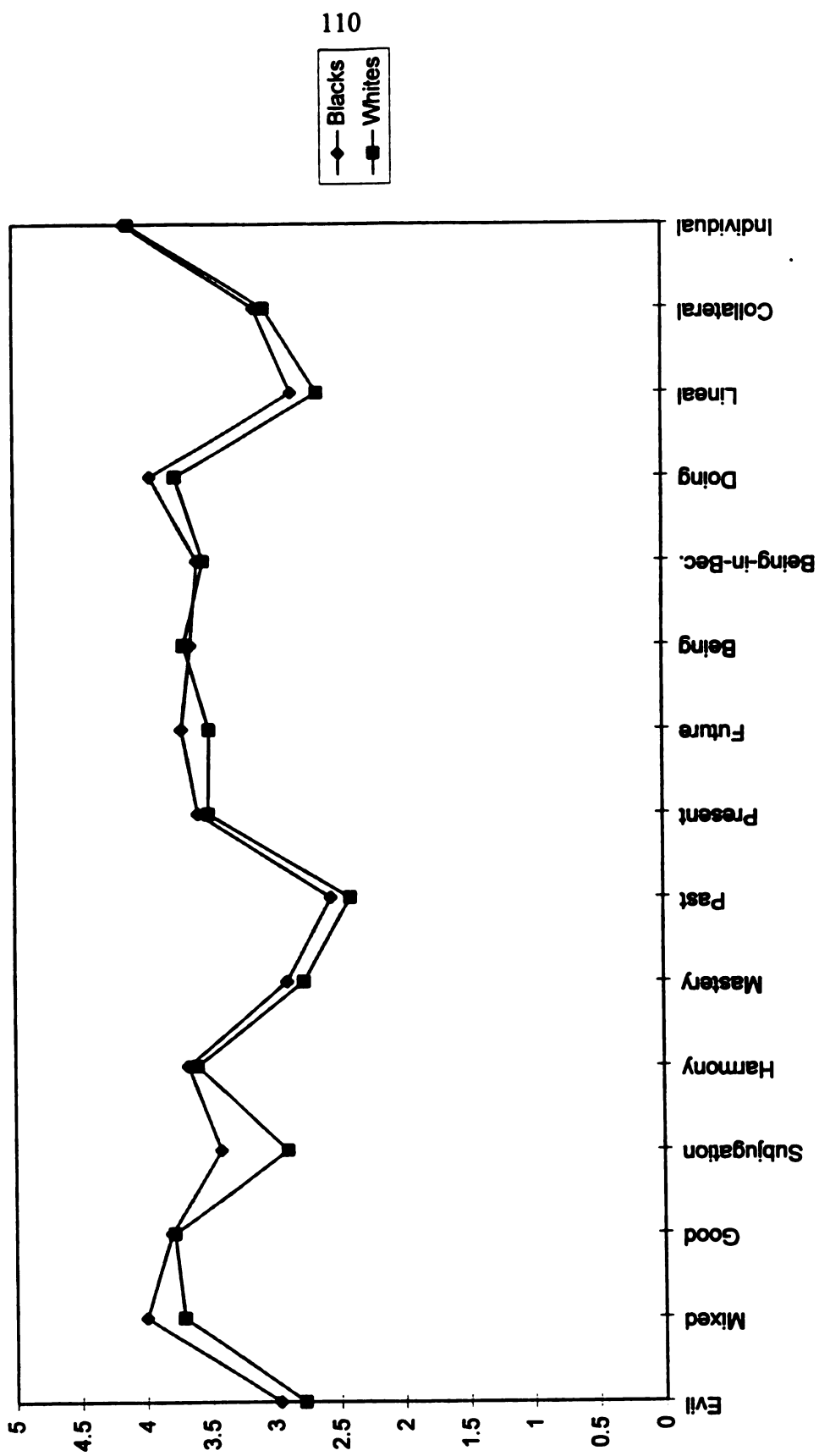
### *Summary*

Convincing evidence was found that cultural value differences exist between Blacks and Whites. Figure 5 plots the mean level of endorsement of the cultural value scales for these racial subgroups. Although Blacks and Whites do differ in their relative endorsement of the cultural value alternatives, equally persuasive evidence indicates that the cultural value differences between these racial groups are not consistent with theoretical expectations.

Using univariate tests, several cultural value differences were detected between Black and White racial subgroups. In particular, Blacks were more likely to endorse the Evil and Mixed alternatives of the Human Nature orientation, Subjugation to nature alternative of the Person-Nature orientation, Past and Future alternatives of the Time orientation, and the Doing alternative of the Activity orientation. Although several of these subgroup differences were consistent with Hypothesis 4, the findings that Blacks differentially preferred the Evil, Future and Doing alternatives were surprising. It is important to note that each of the race differences in cultural values as detected by the univariate procedures was due to greater endorsement on the part of Blacks compared to Whites. In order to control for several possible alternative explanations for the findings, the effects of SES and racial identity strength were examined with hierarchical regression. After performing this analysis, it was still found that Blacks generally had a differential preference for the cultural value alternatives of Evil, Mixed, Subjugation to nature, Past and Future. This analysis also revealed that Blacks low in racial identity strength differentially preferred the Lineal alternative of the Relations orientation more than Whites. Finally, the Individual alternative of the Relations orientation was endorsed more frequently by Whites low, and Blacks high, in racial identity strength. These findings strongly suggest that although the racial subgroups examined in this study differ in their endorsement of cultural values, these differences are not consistent with theory.



**Figure 5:**  
**Endorsement of Cultural Values by Race**



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The ultimate goal of the present study was to determine whether cultural value differences between racial subgroups might influence responses to biodata employment items. The next section considers whether cultural value differences between individuals might lead to disparate selection of biodata response options.

### Cultural Values & Biodata Responses

Do cultural values influence responses to biodata employment items? In order to determine whether responses to commonly used biodata items were consistent with the cultural values of the respondent (e.g., hypothesis 5), loglinear analyses were conducted. Specifically, the polychotomous loglinear approach proposed by Green, Crone, & Folk (1989) was used to determine whether cultural values influenced responding to any of the 107 biodata items used in the current study. Initially, each cultural value alternative was trichotomized to represent low, medium, and high levels of endorsement of that cultural value alternative. Cultural value alternatives were trichotomized by dividing the distribution of all endorsements into thirds. Those individuals in the lowest one-third of the distribution of endorsement responses to a value orientation alternative were assigned to the low group. Those in the middle 1/3 were assigned to the average endorsement group for that particular value orientation. Finally, those scoring in the upper third of the distribution of responses for a particular value orientation alternative were considered to represent a high level of endorsement.

Recall that each biodata item was originally selected for inclusion in this study if one or more option was judged by independent raters to reflect a cultural value alternative. In order to test hypothesis 5, loglinear analysis was conducted by forming a 3-way contingency table as follows. For each biodata item, the frequency of each option choice (e.g., a,b,c, or d) was computed for each racial group (i.e., Black or White) at each

level of the specified cultural value alternative (i.e., low, medium, or high). The loglinear analysis was composed of three main effects (racial group, cultural value alternative, and option choice), three 2-way interactions (racial group\*cultural value, racial group\*option choice, and cultural value\*option choice), and one 3-way interaction (racial group\*cultural value\*option choice). The influence of cultural values on option choice was examined by comparing two models. The first model was composed of all main effects and all 2-way interactions, and the second model was composed of all main effects and all 2-way interactions *except* the cultural value\*option choice interaction. If the difference in chi-squares between the two models was significant, this provided evidence that the level of endorsement of the cultural value alternative influenced option response choice. Table 13 presents a complete listing of the biodata items which were found to be influenced by cultural values. Specifically, this table presents the biodata item number, the difference in chi-squares and df between the two loglinear models, the significance level of this difference, and the cultural value alternative examined. A list of each of these biodata items is found in Appendix B. Using a criterion of alpha equal to .05, responses to twenty-two of the 107 biodata items included in this study were influenced by endorsement of cultural values. Thus, only 21% of the biodata responses could be attributed to cultural value differences between respondents. This result is surprising, considering that the biodata items were chosen for inclusion in the present study only if 2 out of 3 independent raters agreed that one or more response options for a particular biodata item reflected one of the cultural value alternatives suggested by Kluckhohn and Strodtbeck (1961).

Although loglinear analyses demonstrated that cultural values did influence option selection for some of the biodata items included in the study, mere examination of the loglinear models fails to provide information regarding whether the raters' a priori classification of a particular option as reflecting a cultural value alternative was in fact the

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**Table 13:**  
**Results of the test for significant difference in Chi-squares for**  
**Loglinear Analyses examining Cultural value\*Option Choice Interaction**

<b>Item #</b>	<b><math>\Delta \chi^2</math></b>	<b><math>\Delta df</math></b>	<b>Cultural value Alternative</b>
2	13.38*	6	Good
3	13.47*	6	Evil
6	20.18**	6	Doing
11	19.40*	8	Evil
15	23.49**	8	Future
21	17.00**	4	Future
25	17.80*	8	Past
26	12.87*	6	Doing
28	28.91**	4	Lineal
33	19.34**	6	Doing
47	51.37**	8	Lineal
59	19.39*	8	Doing
63	13.34*	6	Doing
64	27.73**	10	Being-in-Becoming
68	23.50**	7	Doing
71	17.06*	8	Future
73	29.51**	10	Doing
75	14.15**	4	Lineal
77	51.11**	10	Evil
87	33.86**	4	Present
96	16.46**	2	Future
110	15.44*	6	Collateral

\* indicates significant difference between log-linear models,  $p < .05$

\*\* indicates significant difference between log-linear models,  $p < .01$

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option differentially preferred by respondents who strongly endorsed the cultural value alternative. As an example, if the biodata option 3 was a priori selected as most reflecting the "Good" alternative of the Human Nature orientation, did individuals who strongly endorsed the Good alternative prefer option 3 more than individuals who less strongly endorsed the Good alternative? In order to determine whether cultural values influenced the selection of biodata options as expected, the cultural value\*option interaction for each of the 22 flagged biodata items was graphed. Appendix D presents these graphs. These graphs were formed by graphing the proportion of respondents from each level of endorsement of the cultural value (i.e., low, medium, of high) that selected each biodata option for a particular item. A brief description of each of these interactions follows:

*Biodata item 2:*

As expected, those who strongly endorsed the Good alternative of the Human Nature orientation were more likely to report that their experience with people has demonstrated that there exists a lot of good in all people.

*Biodata item 3:*

Consistent with expectations, individuals who strongly endorsed the Evil alternative of the Human Nature orientation were more likely than those individuals who less strongly endorsed the Evil alternative to indicate that exams should be closely proctored because few students are completely honest.

*Biodata item 6:*

As hypothesized, those who strongly endorsed the Doing alternative of the Activity orientation were more likely to indicate that they plan their weekends either in general terms or in detail, in comparison to those who less strongly endorsed the Doing alternative.

*Biodata item 11:*

Consistent with the hypothesis, participants who strongly endorsed the Evil alternative of the Human Nature orientation were more likely to strongly agree that they tend to be cynical and skeptical of other's intentions.

*Biodata item 15:*

As expected, respondents who strongly endorsed the Future alternative of the Time orientation were more likely to keep a schedule written down weeks in advance than were those who less strongly endorsed the Future alternative.

*Biodata item 21:*

In support of the hypothesis, individuals who strongly endorsed the Future alternative of the Time orientation were more likely to do a lot more planning before starting each day than those who did not strongly endorse the Future alternative.

*Biodata item 25:*

Contrary to expectation, participants who strongly endorsed the Past alternative of the Time orientation were less likely to report feeling thoroughly interested by museum visits than those who less strongly endorsed this alternative.

*Biodata item 26:*

Consistent with expectations, those who strongly endorsed the Doing alternative of the Activity orientation were more likely to report more hours of their day is spent in constructive work than those who less strongly endorsed the Doing alternative.

*Biodata item 28:*

As expected, in contrast to those who weakly endorse the Lineal alternative of the Relations orientation, those who strongly endorse the Lineal alternative are more likely to assert that people should have greater respect for authority.

*Biodata item 33:*

Consistent with the hypothesis, respondents who strongly endorsed the Doing alternative of the Activity orientation were more likely than others to report that hard work makes them feel good.

*Biodata item 47:*

As expected, individuals who strongly endorsed the Lineal alternative of the Relations orientation were more likely than those who weakly endorsed the Lineal alternative to strongly agree that we should look to our religious authorities for decisions on moral issues.

*Biodata item 59:*

Consistent with expectations, participants who strongly endorsed the Doing alternative of the Activity orientation were more likely than those who weakly endorsed this alternative to be bothered most by people who lack initiative.

*Biodata item 63:*

As expected, respondents who strongly endorsed the Doing alternative of the Activity orientation were more likely than those who weakly endorsed this alternative to be considerably or highly disturbed when they leave something unfinished.

*Biodata item 64:*

Consistent with expectations, individuals who strongly endorsed the Being-in-Becoming alternative of the Activity orientation were more likely to very often choose classes, projects, or assignments simply to learn something new than were individuals who less strongly endorsed the Being-in-Becoming alternative.

*Biodata item 68:*

As expected, participants who strongly endorsed the Doing alternative of the Activity orientation were much more likely to strongly agree that they work hard to accomplish their goals than were individuals who less strongly endorsed this alternative.

*Biodata item 71:*

Contrary to expectation, individuals who strongly endorsed the Future alternative of the Time orientation were no more likely than others to recognize that they do not have a required piece of equipment or part prior to actually needing it.

*Biodata item 73:*

As expected, those who strongly endorsed the Doing alternative of the Activity orientation were more likely than those who less strongly endorsed the Doing alternative to assert that they are a productive person who always gets the job done.

*Biodata item 75:*

Consistent with the hypothesis, individuals who strongly endorsed the Lineal alternative of the Relations orientation were more likely than those who weakly endorsed this alternative to respect people in positions of authority.

*Biodata item 77:*

Consistent with expectations, participants who strongly endorsed the Evil alternative of the Human Nature alternative were more likely than those who less strongly endorsed this alternative to strongly agree that people will take advantage of you if you let them.

*Biodata item 87:*

As expected, those who strongly endorsed the Present alternative of the Time orientation were more likely to report they believe in living for the moment than were individuals who weakly endorsed the Present alternative.

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*Biodata item 96:*

Consistent with expectation, participants who strongly endorsed the Future alternative of the Time orientation were more likely than others to use a date book or planner.

*Biodata item 110:*

The interpretation of this graph supports the notion that those who strongly endorse the Collateral alternative of the Relations orientation are less likely to prefer being along than are those who weakly endorse this alternative.

Twenty of the twenty-two biodata items that demonstrated a significant cultural value\*option choice interaction received empirical verification consistent with a priori expectations. That is, raters' a priori classification of a particular option for a biodata item was found to be preferred by individuals who strongly endorsed the targeted cultural value in 20 of the 22 flagged biodata items. Of these twenty items, 1 item was related to the Good alternative, and 3 items were related to the Evil alternative of the Human Nature orientation. One biodata item which was a priori classified as reflecting both the Past and Present alternatives, and 3 items classified as reflecting the Future alternative of the Time orientation received empirical verification. The choice of response option was influenced as expected by the Being-in-Becoming alternative for 1 biodata item, and by the Doing alternative of the Activity orientation for 7 biodata items. Raters' classification of biodata items as reflecting the Relations orientation alternatives of Collateral and Lineal received empirical verification 1 and 3 times respectively.

Table 14 collapses the information regarding the degree to which each of the 15 cultural value alternatives influenced biodata response option selection into the 5 cultural value orientations. Although only 5 biodata items were a priori judged to reflect 1 of the 3 Human Nature alternatives, responses to 4 of these items were found to be influenced

**Table 14:**  
**Degree to which Cultural Value Orientations Influenced**  
**Biodata Response Option Selection, as Predicted**

<b>Cultural Value Orientation A Priori Hypothesized</b>	<b>Proportion of Items Receiving Empirical Support</b>	<b>Percentage of Items Receiving Empirical Support</b>
<i><b>Human Nature</b></i>	<i><b>4/5</b></i>	<i><b>80%</b></i>
Good	1/1	100%
Mixed	0/0	---
Evil	3/4	75%
<i><b>Person-Nature</b></i>	<i><b>0/10</b></i>	<i><b>0%</b></i>
Subjugation	0/3	0%
Harmony	0/1	0%
Mastery	0/6	0%
<i><b>Time</b></i>	<i><b>6/15</b></i>	<i><b>40%</b></i>
Past	1/1	100%
Present	1/2	50%
Future	4/12	33%
<i><b>Activity</b></i>	<i><b>8/41</b></i>	<i><b>20%</b></i>
Being	0/8	0%
Being-in-Becoming	1/10	10%
Doing	7/23	30%
<i><b>Relations</b></i>	<i><b>4/36</b></i>	<i><b>11%</b></i>
Lineal	3/7	43%
Collateral	1/18	6%
Individual	0/11	0%
<b>Total</b>	<b>20/107</b>	<b>19%</b>

by the individual's endorsement of this value orientation. In other words, one's view of basic human nature is likely to influence responses to biodata items which include response options which refer to the Evil or Good intentions of individuals. However, the fact that only 5 biodata items were a priori classified as reflecting a Human Nature orientation indicates that few biodata items in the several biodata test banks used for this study actually reflect this orientation. None of the 10 items classified a priori as reflecting one of the Person-Nature orientation alternatives were found to be influenced by the degree to which the individual endorsed this cultural value orientation. For the biodata items a priori classified as reflecting an alternative of the Time orientation, responses to over one-third (6/15) of these items were found to be influenced by the individual's endorsement of this cultural value orientation as expected. The vast majority (72%) of the biodata items included in the present study were thought to reflect either the Activity ( $n = 41$ ) or Relations ( $n = 46$ ) cultural value orientations. Biodata items which were a priori classified as reflecting either an Activity or Relations orientation were influenced by endorsement of these cultural values for 8 and 4 of the items respectively. (Alternatively, 20 and 11 percent of the time, respectively.) Overall, of the 107 biodata items that raters agreed reflected cultural values, responses to 20 biodata items were actually shown to be influenced by cultural values as expected. Consistent with hypothesis 5, these findings suggest that cultural values do have some impact on responses to biodata items. However, some cultural values seem more likely than others to influence biodata responses.

### *Summary*

Are biodata responses contingent upon the cultural values of the respondent? The analyses discussed above strongly suggest that the individual's cultural values do influence responses to biodata items. Responses to biodata items which assess the individual's perception of human nature and time orientations are especially likely to be

influenced by the cultural values of the individual. Fortunately, perhaps, these biodata items were relatively rare in the several biodata databanks used in this study. Biodata items which were classified as reflecting the cultural value orientations of Activity and Relations were much more prevalent in the several databases examined, but responses to these items were less influenced by the cultural values of the respondent. Even so, 20 of the 107 biodata items examined in this study were found to be influenced by the cultural values of the individual as predicted. This is far greater than the approximately 5 items which would be expected by chance alone.

#### Racial Subgroups, Cultural Values, and Biodata Responses

Do cultural value differences between racial subgroups influence biodata option selection? Hypothesis 6 could be tested by comparing the fit of the saturated model discussed above composed of the cultural value\*racial subgroup\*option interaction, with a second loglinear model which is composed of all two-way interactions, but excludes the three-way interaction. If the fit of the second model was significantly worse than the model containing the 3-way interaction, we would have evidence that cultural value differences between the racial subgroups influenced option choice for that particular biodata item. The problem with such an analysis is that ignores the influence of participants' overall test score. Thus, any findings regarding response option selection differences across racial subgroups may merely be reflecting differences in overall ability on the biodata test. In order to control for possible performance differences across racial subgroups, it would be necessary to include a fourth main effect -- performance level. This could be a trichotomized variable indicating low, medium, and high levels of ability on the overall biodata test. The loglinear analyses could then proceed by comparing a model composed of all 3-way interactions (performance level\*racial subgroup\*option

choice; performance level\*cultural value\*option choice; performance level\*racial subgroup\*cultural value; and, racial subgroup\*cultural value\*option choice) with a second model composed of all three-way interactions *except* the racial subgroup\*cultural value\*option choice interaction. A significant difference between the fit of the two models would support the notion that cultural value differences across racial subgroups influenced option choice for that particular biodata item. Unfortunately, such an analysis would require a very large sample size in order to ensure that each cell in the contingency table possessed a sufficient number of observations. The sample size used in the present study precludes such an analysis. Therefore, in order to examine whether cultural value differences across racial subgroups influenced option choice, differences in preferences for particular biodata response options were initially examined across racial subgroups, after controlling for overall biodata test score. Following this analysis, items exhibiting differential item functioning were interpreted in light of the a priori expectations regarding cultural values differences. These analyses were conducted in order to determine whether the cultural value correlates of biodata responses were identical to the race correlates of biodata responses. If responses to identical biodata items were influenced by both the adoption of cultural values and race, we could conclude that cultural value differences between racial subgroups is likely to produce DIF for biodata employment items.

### **Racial Subgroups and Biodata Responses**

Loglinear analyses were conducted to examine the possibility of differential responding to the biodata items by Blacks and Whites. The approach suggested by Green, Crone, and Folk (1989) was again used to examine differential responding across each option composing a particular biodata item. In order to determine whether racial

subgroup influenced option choice, the loglinear analyses conducted in this section were composed of 3 main effects: biodata option choice, racial subgroup, and performance group. Performance groupings were created by trichotomizing the overall score achieved on the biodata test into low, medium, and high performing groups. Recall that overall test score was formed by initially providing a rational key (based on the job of police officer) for each item. Overall test score was produced by summing individual item scores across the 107 biodata items and 7 non-random response items. The effect of including the seven non-random response items was in essence equal to the addition of a constant to the overall biodata test score, since cases with more than 1 non-random response were deleted from all analyses.

Loglinear analysis was conducted by forming a 3-way contingency table as follows. For each biodata item, the frequency of each option choice (e.g., a,b,c, or d) was computed for each racial group (e.g., Black or White) at each performance level (e.g., low, medium, or high). The loglinear analysis was composed of three main effects (racial group, performance level, and option choice), three 2-way interactions (racial group\*performance level, racial group\*option choice, and performance level\*option choice), and one 3-way interaction (racial group\*performance level\*option choice). The influence of racial subgroup on option choice was examined by comparing the model composed of all main effects and all 2-way interactions, with a second model composed of all main effects and all 2-way interactions *except* the racial subgroup\*option choice interaction. If the difference in chi-squares between the two models was significant, this provided evidence that preferences for biodata response options were dependent upon one's racial subgroup.

Table 15 presents a complete listing of the biodata items which demonstrated differential responding across racial subgroups. Specifically, this table presents the biodata item number, the difference in chi-squares and df between the two loglinear

**Table 15:**  
**Results of the test for significant difference in Chi-squares for**  
**Loglinear Analyses examining Racial Subgroup\*Option Choice Interaction**

<b>Item #</b>	<b><math>\Delta \chi^2</math></b>	<b><math>\Delta df</math></b>	<b>Cultural Value Orientation</b>
2	10.18*	3	Human Nature
3	11.89**	3	Human Nature +
6	18.83**	3	Activity +
8	26.22**	4	Relations
10	31.16**	4	Human Nature
11	9.76*	4	Human Nature
12	14.03**	4	Person-Nature +
18	14.56**	2	Time
20	10.74**	1	Relations
23	14.88**	2	Time
33	10.82**	2	Activity +
40	9.76*	4	Activity +
42	10.53*	4	Activity +
44	15.74**	4	Activity +
47	40.83**	4	Relations +
53	8.79*	3	Activity
57	9.52**	2	Activity
58	11.67*	5	Activity
69	11.42*	4	Relations +
72	12.07*	4	Activity
74	18.49**	3	Relations +
77	36.61**	4	Human Nature
83	15.56**	4	Relations +
87	14.25**	2	Time
89	33.41**	4	Relations +
94	15.41*	7	Relations +
95	6.77*	2	Relations +
99	14.77*	4	Relations
100	9.45*	3	Relations +
103	20.23**	3	Activity
104	9.23*	3	Activity +
106	6.16*	2	Person-Nature +
110	8.31*	3	Relations
112	6.22*	1	Relations +
114	8.96*	3	Relations

\* indicates significant difference between loglinear models,  $p < .05$

\*\* indicates significant difference between loglinear models,  $p < .01$

+ indicates flagged item is consistent with theory

models, and the significance level of this difference. Additionally, this table provides the cultural value orientation the item was a priori expected to reflect. Appendix C presents a complete list of each of these biodata items. Overall, 35 out of 107, or 32.7% of the biodata items exhibited differential responding across racial subgroups. Blacks and Whites apparently were attracted to different response options for a surprisingly large percentage of the biodata items.

#### Racial Subgroups, Expected Cultural Values Influences, & Biodata Responses

In order to determine which options of a particular item were differentially preferred by one of the racial groups, each of the 35 significant racial subgroup\*option choice interactions were graphed. These graphs were formed by graphing the proportion of respondents from each racial group that selected each biodata option for a particular item. These 35 graphs are presented in Appendix E. A brief description of the interpretation of each graph follows. In addition to the interpretation of the racial subgroup\*option choice interaction, brief comment is provided as to whether the finding was consistent with a priori expectations regarding cultural value differences.

##### *Biodata item 2:*

Whites have a slight preference for options which reflect the concept that, in their own experience, most people have a lot of good, or some good. Blacks are more likely than Whites to prefer the option indicating that it has been their experience that people are about as good as they have to be. This finding is contradictory to the a priori theoretical expectation that Blacks would be more likely to endorse options reflecting the idea that human nature is basically "good". Interestingly, this finding is consistent with Carter's (1990) empirical finding.

*Biodata item 3:*

Whites differentially prefer the option reflecting the sentiment that exams should be closely proctored in order to carefully watch the few "bad apples". Blacks are more likely than Whites to endorse the honor system for test examination. This finding is consistent with the a priori hypothesis that Whites would be more likely to endorse options reflecting the idea that human nature is basically "evil".

*Biodata item 6:*

Whites are more likely than Blacks to endorse the option indicating that weekends are planned in general terms. Blacks are more likely than Whites to plan few or no weekend activities, and simply do what feels right at the time. This finding is consistent with a priori expectations that Blacks would view activity as more spontaneous, and Whites would be more "doing" oriented.

*Biodata item 8:*

Although both groups most frequently stated that the most important thing to them is family and friends, Blacks preferred the "religion" option more than Whites. This is consistent with the expectation that Blacks would be more likely to endorse societal authority (i.e., the Lineal alternative of the Relations orientation).

*Biodata item 10:*

Whites preferred options 2 & 4 as the ways they would discipline a child. These options reflected sentiments referring to encouragement of good behaviors, and attempting to reason with a child. Blacks were more likely than Whites to prefer options 5 & 1. Option 5 reflects physical punishment, while option 1 refers to withdrawal of pleasure. This finding contrasts with the expectation that Whites would be more likely than Blacks to believe that basic human nature is "evil", and therefore requires punishment.

*Biodata item 11:*

When asked if they tend to be cynical and skeptical of other's intentions, Blacks expressed greater preference than Whites for the "strongly agree" option. Whites, more strongly than Blacks, preferred the disagree option to this item. This finding contrasts with the expectation that Whites would be more likely than Blacks to believe that the basic human nature is "evil".

*Biodata item 12:*

Blacks differentially preferred to try to reschedule an important meeting if faced with treacherous road conditions, whereas Whites preferred to leave early for the appointment, and use extra driving precautions. This finding was consistent with expectations for the Mastery alternative of the Person-Nature orientation, that Whites would be more likely than Blacks to feels they could control nature.

*Biodata item 18:*

Blacks differentially prefer to plan every detail while on vacation, while Whites differentially preferred to make only general plans. This finding was inconsistent with the expectation that Whites would be more detail and planning oriented than Blacks (i.e., the Future alternative of the Time orientation).

*Biodata item 20:*

Whites, differentially more than Blacks, preferred to be in a dance-band than a soloist in an opera. In contrast to expectations regarding the Collateral alternative of the Relations orientation, Blacks were more likely to express the desire to be singled out, rather than a part of a group.

*Biodata item 23:*

Concerning present activities, Blacks were more likely than Whites to endorse the option indicating they make rather precise and detailed plans. Whites differentially preferred broad, general plans. This finding was inconsistent with the expectation that

Whites would be more planning oriented than Blacks (i.e., the Future alternative of the Time orientation).

*Biodata item 33:*

Whites differentially preferred the option indicating that hard work makes them feel good. Blacks differentially preferred the option that they don't mind hard work now and then. Consistent with expectation that Whites would be more Doing oriented, Whites were more likely to report that hard work makes them feel good.

*Biodata item 40:*

Whites were more likely than Blacks to indicate that they sometimes feel upset at the end of the workday because they had not accomplished enough. Blacks were more likely than Whites to say they never feel upset because they had not accomplished enough. Consistent with the a priori expectation that Whites would be more Doing oriented, Whites were more likely to report being upset at the end of the day for not accomplishing enough.

*Biodata item 42:*

Whites are more likely than Blacks to admit "sometimes" making up work to keep from being bored. Blacks are more likely than Whites to indicate they "seldom" do this practice. Once again, this finding is consistent with the expectation that Whites would be more accomplishment, or Doing, oriented.

*Biodata item 44:*

Whites are more likely than Blacks to indicate "sometimes" feeling guilty when they take time off to relax. Blacks are more likely than Whites to prefer the option indicating they never feel guilty when taking time off to relax. This finding is also consistent with the a priori expectation that Whites would be more Doing oriented.

*Biodata item 47:*

Blacks are much more likely than Whites to strongly agree or agree that we should look to our religious authorities for decisions on moral issues. Consistent with the expectation that Blacks would be Lineally oriented on the Relations orientation, religious authorities are seen as more acceptable sources of guidance by Blacks than Whites.

*Biodata item 53:*

Whites were more likely than Blacks to keep on reading when they encounter a word they are unfamiliar with, while Blacks differentially preferred to immediately consult a dictionary. No a priori expectations regarding racial subgroup differences were made for this item, which was classified as reflecting the Being-in-Becoming alternative of the Activity orientation.

*Biodata item 57:*

Whites differentially preferred lectures, while Blacks differentially enjoyed discussion classes in college. No a priori expectations regarding racial subgroup differences were made for this item, which was classified as reflecting the Being-in-Becoming alternative of the Activity orientation.

*Biodata item 58:*

The interpretation of this item is that Blacks differentially prefer to stop only at planned points along a vacation trip in a car. This finding did not support the expectation that Whites would be more likely to be accomplishment oriented.

*Biodata item 69:*

Whites were more likely than Blacks to have no involvement in civic organizations, while Blacks were more involved, up to 3 memberships. This finding supports the a priori expectation that Blacks would be more community oriented than Whites (i.e., Collateral alternative of the Relations orientation).

*Biodata item 72:*

Relative to Blacks, Whites expressed greater interest in speculating on the nature of the universe or the human condition. No a priori expectations regarding racial subgroup differences were made for this item, which was classified as reflecting the Being-in-Becoming alternative of the Activity orientation.

*Biodata item 74:*

Blacks were less likely to report being disrespectful to high school teachers than Whites. Consistent with the expectation that Blacks would be more likely than Whites to accept authority (i.e., the Lineal alternative of the Relations orientation), Blacks reported less disrespect for their high school teachers than Whites.

*Biodata item 77:*

Blacks were much more likely to strongly agree that most people will take advantage of you if you allow them to. Whites differentially preferred the option indicating they were neither in agreement nor disagreement with this proposition. In contrast to expectations, Blacks were more likely than Whites to indicate that people are basically "evil".

*Biodata item 83:*

Whites were more likely than Blacks to indicate that they sometimes put in a lot of extra effort to buy independence, while Blacks were more likely to indicate that they have never worked harder to buy independence. Consistent with expectations regarding the Individual alternative of the Relations orientation, Whites reported greater willingness to sacrifice in order to gain independence than Blacks.

*Biodata item 87:*

Whites differentially preferred living for the moment, while Blacks were more likely than Whites to believe in working for the future. In contrast to expectations

regarding the Future alternative of the Time orientation, Whites were not more likely than Blacks to plan for the future.

*Biodata item 89:*

Blacks were more likely than Whites to report that community/volunteer work is important to them. Consistent with a priori predictions concerning the Collateral alternative, Blacks reported more community involvement than Whites.

*Biodata item 94:*

Blacks were more likely than Whites to report they often have observed people put friendships and personal goals aside to try to achieve a greater good for the larger group. Whites differentially preferred the "sometimes" option. Consistent with expectations regarding the Collateral alternative, Blacks were more attracted to the option indicating instances of self-sacrifice for the good of the group.

*Biodata item 95:*

Whites differentially preferred the option which indicates they have seldom hurt a friend to benefit themselves, while Blacks differentially preferred the option indicating they have never done this. As expected, Whites were more likely than Blacks to choose the response option consistent with the Individual alternative of the Relations orientation.

*Biodata item 99:*

Blacks were differentially more likely to report they have "often" been accused by others of doing something solely because it was in their best interest. Whites were more likely than Blacks to report they have "seldom" been so accused. Contrary to expectations for the Collateral alternative of the Relations orientation, Blacks were more likely to report having been accused of doing something in their own self-interest.

*Biodata item 100:*

Consistent with expectations regarding the Collateral alternative, Blacks reported more involvement in community groups than Whites.

*Biodata item 103:*

As a child when something was broke in an effort to see "what makes it tick", Blacks report (more often than Whites) that their parents became angry and punished them. Whites are more likely than Blacks to report that their parents tried to explain that it was wrong, or tried to help them find the answers they were seeking. No a priori expectations regarding racial subgroup differences were made for this item, which was classified as reflecting the Being-in-Becoming alternative of the Activity orientation.

*Biodata item 104:*

Whites are more likely than Blacks to be bothered somewhat by an unfinished chore. This finding is consistent with expectations regarding the Doing alternative, that Whites would be more accomplishment oriented than Blacks.

*Biodata item 106:*

Whites were more sure than Blacks that what happens in the long run is mostly under their control. Consistent with expectations regarding the Mastery over Nature alternative, Whites reported feeling in greater control of their destiny than Blacks.

*Biodata item 110:*

In contrast to expectations regarding the Collateral alternative, Blacks preferred being alone more than Whites.

*Biodata item 112:*

Blacks are more likely than Whites to have won a commendation for civic involvement since high school. Consistent with expectations regarding the Collateral alternative, Blacks were more likely to receive public recognition for community involvement.

*Biodata item 114:*

If given an important project at work that needed more attention, Whites indicate they would minimally attend to other projects due to the realization that all work time could not be devoted to the more important project. Blacks are more like to respond that they would divide their time equally among projects. In contrast to expectations regarding the Collateral alternative, Blacks did not prefer the option of requesting help from co-workers when given an important project.

Referring once more to Table 15, the last column represents the cultural value orientation to which each of the above 35 items was classified a priori. Notice that a star (\*) is located next to the cultural value orientation of some items. A star has been placed in the row only if (1) the biodata item was included in the present study because it was classified as reflecting a particular cultural value orientation, (2) the item actually did exhibit differential responding by racial subgroup, and, (3) the interpretation of this interaction was consistent with a priori expectations, as portrayed in Table 1. For example, the row for biodata item 3 in Table 15 is starred because the interpretation of the graph of the racial subgroup\*option choice interaction is consistent with the a priori expectation that Whites, more than Blacks, would view basic human nature as "evil". Examination of Table 15 reveals that the a priori expectations regarding the influence of cultural values were empirically supported in 18 of the 35 items which exhibited differential responding by race. Of the total set of biodata items, 18/107, or 17%, were accurately predicted to exhibit differential item functioning across racial subgroups due to expected cultural value differences. Thus, the proposition that cultural values could be a priori identified which would lead to differential responding across racial groups received partial support.

Table 16 reports the number of biodata items a priori classified as reflecting each cultural value orientation, the number and percentage of these items exhibiting differential item responding across racial subgroups, and the number and percentage of items which demonstrated DIF consistent with theoretical expectations. Five biodata items were included in this study which were thought to reflect the cultural value of Human Nature. Each of these five items exhibited differential responding across racial subgroups. However, only 1 of these 5 items were interpreted as originally expected. Contrary to expectations, Blacks did not view human nature as more "good" than Whites. Indeed, for those biodata items thought to reflect the cultural value of human nature, Blacks were generally more likely than Whites to endorse a negative, cynical view of human nature.

Of the eleven biodata items included in the study which were classified as reflecting a Person-Nature orientation, only two items (20%) were flagged for differential responding across racial groups. Both items supported the expectation that Whites would adopt a greater sense of mastery over nature than Blacks.

Fifteen biodata items were originally classified as reflecting a Time orientation. Of these items, 3 exhibited differential responding across racial subgroups. The interpretation of the racial subgroup\*option interaction for each of these items was inconsistent with a priori expectations, however. Contrary to expectations, Blacks, not Whites, tended to choose biodata options that depicted greater concern with future events.

Forty-one biodata items were originally classified as reflecting an Activity orientation. Of these 41, eleven were found to exhibit differential responding across racial subgroups. Four of these eleven items were a priori classified as assessing the "being-in-becoming" alternative of the Activity orientation (biodata items 53, 57, 72, and 103). No a priori expectations were made regarding which racial subgroup, if any, would

**Table 16:**  
**Number of Biodata Items Exhibiting DIF by**  
**Racial Subgroup Consistent with Theoretical Expectations**

<b>Cultural Value Orientation</b>	<b># of Biodata Items</b>	<b># of DIF Items by Racial Subgroup</b>	<b>% of DIF Items by Racial Subgroup</b>	<b># Consistent with Theory</b>	<b>% Consistent with Theory</b>
Human Nature	5	5	100%	1	20%
Person - Nature	10	2	20%	2	20%
Time	15	3	20%	0	0%
Activity	41	11	27%	6	15%
Relations	36	14	39%	9	25%
<b>Total</b>	<b>107</b>	<b>35</b>	<b>33%</b>	<b>18</b>	<b>17%</b>

prefer this alternative. Thus, only seven of the Activity items which exhibited differential responding across race were a priori classified as expected to differ across race. The interpretation of 6 of these 7 items was consistent with theoretical expectations. The differential response patterns indicate that Whites do seem to have a greater "doing" orientation than Blacks -- they prefer biodata options referring to liking hard work, being bothered by an unfinished chore, and feeling guilty when not working.

Finally, 36 of the biodata items were originally classified as reflecting the Relations orientation. Of these 36 items, 39% (i.e., 14 items) exhibited differential responding across racial subgroups. Nine of the 14 items were consistent with theoretical expectations. Responses to the biodata items indicate that Blacks are more likely to endorse options reflecting respect for elders and religion -- consistent with the Lineal alternative of the Relations orientation. Also consistent with expectations, Blacks report more civic involvement than Whites, indicating a possible communal affiliation. However, Blacks were also more likely to desire to be alone, and were more likely than Whites to have been accused of behaving in their own self-interest.

### *Summary*

Are racial subgroup differences in responding to biodata employment items consistent with expected cultural value differences between these groups? The findings of the present study strongly suggest that biodata items assessing Human Nature and Relations orientations are likely to lead to differential responding across racial subgroups. Subgroup differences in item responding were found for 100% of the biodata items a priori classified as reflecting one's view of basic human nature, and 39% of the items classified a priori as reflecting one's view of interpersonal relations. A sizeable percentage of items reflecting the other cultural value orientations also exhibited differential item functioning. In particular, 20% of the biodata items a priori classified as

reflecting the Activity orientation were found to lead to differential responding across racial subgroups.

However, the differential preferences for options on these biodata items were often not consistent with theory. Although nearly 1/3 of the biodata items included in this study demonstrated DIF, only 17% of the items were consistent with theory. This finding suggests the need for the revision of theory concerning the cultural value differences between racial subgroups. Theoretical revisions regarding how racial subgroups view basic human nature are particularly needed.

#### Racial Subgroups, Actual Cultural Value Influences, & Biodata Responses

If racial subgroup differences in item responding were directly attributable to cultural value differences, we would expect a significant cultural value\*option choice interaction for each of the items exhibiting a significant race\*option choice interaction. In order to examine this possibility, the biodata items which exhibited a cultural value\*option choice interaction were compared with the biodata items which were found to have a significant racial subgroup\*option choice interaction. Responses to 9 of the 107 biodata items were found to be influenced by both cultural values and racial subgroup. These items, along with the cultural values assessed, are reported in Table 17. Clearly, this analysis confirms the finding that biodata items which inquire about an individual's view of basic human nature are likely to lead to differential response patterns across racial subgroups. Of the 5 items included in this study which were classified as reflecting the Human Nature orientation, 4 items were found to exhibit both significant cultural value\*option choice and racial subgroup\*option choice interactions. Few of the items classified as reflecting any of the other 4 cultural value orientations were likely to

**Table 17:**  
**Biodata Items Exhibiting Both a Cultural Value\*Option Choice**  
**and Racial Subgroup\*Option Choice Interaction**

<b>Biodata Item #</b>	<b>Cultural Value Alternative</b>	<b>Cultural Value Orientation</b>
2	Good	Human Nature
3	Evil	Human Nature
6	Doing	Activity
11	Evil	Human Nature
33	Doing	Activity
47	Lineal	Relations
77	Evil	Human Nature
87	Present	Time
110	Collateral	Relations

experience both significant cultural value\*option choice and racial subgroup\*option choice interactions.

### *Summary*

The previous analyses examining differential response options for each racial subgroup examined the degree to which a priori theory-based classifications for cultural value differences actually influenced responses to biodata items. This section considered direct empirical evidence of cultural value and racial subgroup influences on option choice selection. This analysis found that subgroup differences in response selection to only 9 of the 107 (8%) biodata items could be attributed directly to cultural value differences, as measured by the 15 cultural value alternative scales. Given an alpha level of .05 for determination of statistical significance, we would expect approximately 5 out of every 100 items to achieve statistical significance, assuming the items were independent. However, the assumption of independence is certainly violated in the present study. This indicates that family wise error rates are somewhat higher than 5/100. Considering this fact, the finding that 9 items were found to be flagged in both cultural values and race analyses is not particularly impressive.

### Race: The Real Story?

The above analyses provide convincing evidence that Blacks and Whites differ in responses to identifiable types of biodata items. This finding remained even following statistically controlling for the effects of socioeconomic status and social desirability. However, as reported above, researchers have bemoaned the construct validity of race. Dole (1995), for example, has argued

“I propose, therefore, that applied and scientific psychologists drop race because it is a hopelessly ambiguous and politicized descriptor of alleged human subspecies.”(p. 40).

Although applied Industrial/Organizational psychologists may be less concerned with what race *is* and more concerned with maintaining compliance with legal conceptions of race, theoretical I/O psychologists must maintain greater concern for whether any findings regarding race are possibly attributable to other factors. The present study attempted such an analysis. Specifically, the proposed mediating relationship between race, cultural values, and biodata responses was examined by three series of analyses utilizing hierarchical logistic regression. These analyses were conducted in order to examine whether cultural values and biodata responses might explain additional variance in race, even after controlling for several demographic and ability variables. The control variables included SES, sex, a measure of the size of the city the individual grew up in (urbanicity), and cognitive ability.

In the first stage, race was initially regressed on SES, and then sex, cognitive ability, urbanicity. After controlling for these variables, race was regressed onto 1 of the 15 cultural values. If the cultural value explained additional variance in race, the improvement in model fit was significant. This process was repeated for each of the 15 cultural value subscales. The results of each of these analyses are reported in Table 18. Five cultural values explained additional variance in race, after controlling for cognitive performance and each of the demographic variables. These cultural value alternatives were Mixed, Subjugation to Nature, Future, Doing, and Lineal. Thus, variance in race remained after controlling for each of the cognitive performance and demographic variables. Some of this variance was explained by differences in cultural values.

A second analysis was performed which again regressed race onto each of the SES, sex, cognitive ability, and urbanicity variables in the initial 2 steps. In the third

**Table 18:**  
**Results of Logistic Regressions with Race Regressed on**  
**SES, Sex, Urbanicity, Cognitive Ability, and Cultural Values**

Dependent Variable: Race		Evil	Mixed	Good	Subjugation	Harmony	Mastery	Past	Present	Future	Being	Being-in-Bec.	Doing	Lineal	Collateral	Individual
Father Education		-.40														
Mother Education		.07														
Income		-.28														
Constant		2.43														
Improvement		.01														
Urbanicity		1.40														
Sex		-.53														
Cognitive Ability		-.14														
Constant		1.77														
Improvement		.01														
Cultural Value		.67	1.91	.22	1.61	.23	.66	.64	.35	1.29	-.67	-.05	.93	1.33	.65	.06
Constant		-.61	-6.85	.87	-5.87	.91	-.40	-.34	.43	-3.36	4.37	1.96	-2.30	-2.83	-.43	1.50
Improvement		.06	.01	.61	.01	.62	.09	.10	.39	.01	.16	.90	.05	.01	.13	.89

Improvement indicates the significance level of the improvement in model fit

step, however, one of the 107 biodata items entered the equation. If the response to the biodata item explained additional variance in race over that accounted for by each of the control variables, the improvement in model fit was significant at this stage. This analysis was repeated for each of the 107 biodata items. Significant results are reported in Table 19. Responses to 21 of the 107 (20%) biodata items explained additional variance in race, following controlling for the cognitive performance and demographic variables.

In the final stage, race was once again initially regressed onto the demographic and cognitive performance variables. In the third step, the 5 cultural values which explained additional variance in race in stage 1 entered the equation. Finally, race was regressed onto the biodata items which indicated improvement in model fit in stage 2. If the demographic, cognitive performance, and cultural value variables completely mediated the relationship between race and biodata responses, the improvement in model fit would be non-significant at this stage. Alternatively, if the demographic, cognitive ability, and cultural value variables only partially mediated the relationship between race and biodata item responses, the improvement in model fit at this step would achieve significance. The results of this analysis are reported in Table 20. Examination of the table reveals that the relationship between race and 6 of the biodata items was completely mediated -- items 3, 45, 47, 52, 55, and 77. This relationship between biodata responses and race found to be only partially mediated by demographic, cognitive ability, and cultural value variables for 15 of the biodata items.

### *Summary*

The present study found that responses to 20% of the biodata items explained additional variance in race after controlling for the effects of cognitive ability, and the demographic variables of sex, urbanicity, and SES. This 20% is considerably less than the approximately 1/3 of the biodata items exhibiting differential item functioning when

**Table 19:**  
**Results of Logistic Regressions with Race Regressed on**  
**SES, Sex, Urbanicity, Cognitive Ability, and Biodata Items**

Dependent Variable: Race	Bio3	Bio6	Bio8	Bio10	Bio20	Bio33	Bio44	Bio45	Bio47	Bio50	Bio52	Bio55	Bio68
Father Education	-.40												
Mother Education	.07												
Income	-.28												
Constant	2.43												
Improvement	26.22												
Urbanicity	1.40												
Sex	-.53												
Cognitive Ability	-.14												
Constant	1.77												
Improvement	.01												
Biodata Item													
Improvement	.05	.01	.01	.01	.01	.05	.05	.05	.01	.05	.05	.05	.01

Improvement indicates the significance level of the improvement in model fit

Table 19 (Cont'd)

Dependent Variable: Race

	Bio69	Bio74	Bio76	Bio77	Bio87	Bio89	Bio97	Bio104
Father Education	-.40							
Mother Education	.07							
Income	-.28							
Constant	2.43							
Improvement	26.22							
Urbanicity	1.40							
Sex	-.53							
Cognitive Ability	-.14							
Constant	1.77							
Improvement	.01							
Biodata Item								
Improvement	.05	.01	.01	.01	.05	.01	.05	.05

Improvement indicates the significance level of the improvement in model fit

**Table 20:**  
**Results of Logistic Regressions with Race Regressed on SES, Sex, Urbanicity, Cognitive Ability, Cultural Values, and Biodata Items**

Dependent Variable: Race	Bio3	Bio6	Bio8	Bio10	Bio20	Bio33	Bio44	Bio45	Bio47	Bio50	Bio52	Bio55	Bio68
Father Education	-.40												
Mother Education	.07												
Income	-.28												
Constant	2.43												
Improvement	.01												
Urbanicity	1.40												
Sex	-.53												
Cognitive Ability	-.14												
Constant	1.77												
Improvement	.01												
Mixed	1.21												
Subjugation	1.15												
Future	.66												
Doing	-.07												
Lineal	.75												
Constant	-13.83												
Improvement	.01												
Biodata Item													
Improvement	.06	.01	.01	.01	.01	.05	.01	.08	.32	.05	.10	.12	.05

Improvement indicates the significance level of the improvement in model fit

Table 20 (cont'd)

Dependent Variable: Race	Bio69	Bio74	Bio76	Bio77	Bio87	Bio89	Bio97	Bio104
Father Education	-40							
Mother Education	.07							
Income	-.28							
Constant	2.43							
Improvement	.01							
Urbanicity	1.40							
Sex	-.53							
Cognitive Ability	-.14							
Constant	1.77							
Improvement	.01							
Mixed	1.21							
Subjugation	1.15							
Future	.66							
Doing	-.07							
Lineal	.75							
Constant	-13.83							
Improvement	.01							
Biodata Item								
Improvement	.05	.03	.05	.13	.05	.01	.05	.05

Improvement indicates the significance level of the improvement in model fit

the demographic and cognitive ability variables are not statistically controlled. One-third of the cultural value subscales provided additional variance in race after the addition of the control variables.

These analyses suggest a mixed interpretation regarding race. On the one hand, race was significantly predicted by far fewer biodata responses after statistically controlling for the effects of SES, urbanicity, sex, and cognitive ability, than were found when utilizing DIF analyses which did not include such statistical controls. On the other hand, despite arguments that race is an ambiguous construct which merely serves as a proxy for other measurable variables, the analyses suggest that some differences in cultural values and biodata item responses can be attributed to race even after controlling for cognitive ability, sex, urbanicity and SES.

Contrary to the conceptual model presented in Figure 1, little evidence was found indicating that the relationship between biodata responses and race is completely mediated by cultural values (and the control variables). Indeed, this relationship was found for only 6% of the biodata items in the study. An additional 14% of the biodata items were found to be partially mediated by cultural values and the control variables.

#### DIF and Race: Which Racial Subgroup was Hurt More?

The 35 items exhibiting differential item functioning across racial subgroups were also examined to determine whether this DIF would be expected to produce lower overall test scores for Whites or Blacks. Specifically, the scoring key developed for the biodata items was examined for each of the 35 flagged items. If an item was keyed such that the differentially preferred option for Whites received the greatest score, the item was considered to differentially encumber Blacks. If an item was keyed such that the differentially preferred option for Blacks received the greatest score, the item was

considered to differentially hinder Whites. If the source of the differential item functioning for a particular item was an option or options that were not keyed as correct, the item would not produce positive or negative effects for either group. It is important to note that this analysis is meant to serve as an illustration of DIF for one possible occupation -- police officers. Because the rational keying of biodata items may differ depending upon the occupation examined and the particular employee characteristics desired, the results reported below are meant to serve as an example of how DIF could affect the overall test score of a particular racial group. The results of this inspection are reported in Table 21.

Nine of the 35 biodata items favored neither Blacks nor Whites. Rather, the two groups were differentially attracted to options which were not rationally keyed as the correct response. Sixteen of the 35 items exhibiting differential item functioning impeded the performance of Whites, and 10 items impeded Black performance on overall test score.

Whites performed differentially poorly on several of the items regarding community or civic involvements (e.g., items 69, 89, 94, 100, and 112). In contrast to Blacks, Whites were less involved in civic organizations. Whites also performed differentially worse on several items which reflect the themes of planning and working for the future (e.g., items 23, 58, 66, and 87). Contrary to expectations, Whites were less likely to stress the importance of prior planning. Interestingly, both of these groups of items seem to be assessing job relevant skills and abilities for the job of police officer. Therefore, despite the differential item functioning on these items, labeling the overall set of biodata items biased seems inappropriate.

There was a small trend for Blacks to perform differentially worse on items regarding attitudes toward work (items 23, 104, and 114). Specifically, Blacks expressed less concern with hard work than Whites. For the most part however, items on which

**Table 21:**  
**Racial Group Encumbered by Flagged Biodata Items**

<b>Item #</b>	<b>Differentially Encumbered</b>
2	Whites
3	Blacks
6	Neither
8	Neither
10	Whites
11	Whites
12	Whites
18	Blacks
20	Blacks
23	Whites
33	Blacks
40	Neither
42	Neither
44	Neither
47	Neither
53	Whites
57	Whites
58	Whites
69	Whites
72	Blacks
74	Whites
77	Neither
83	Neither
87	Whites
89	Whites
94	Whites
95	Whites
99	Blacks
100	Whites
103	Blacks
104	Blacks
106	Blacks
110	Neither
112	Whites
114	Blacks

Blacks performed differentially worse failed to form rational groupings. However, there was some evidence suggesting that biodata test constructors wishing to avoid racial subgroup DIF might be advised to exclude items pertaining to personal child rearing practices. Two such items were included in this biodata instrument (items 10 and 103). Both items exhibited differential item functioning across Blacks and Whites. Whereas Whites preferred options reflecting a reasoning or rewarding approach, Blacks preferred punishment options. Similarly, there is some indication that items inquiring about how others view the individual may also lead to differential item functioning. Item 99, for example, inquires about the degree to which the individual has been accused by others of doing something solely because it was in their best self-interest. Despite the consistent trend for Blacks to report greater civic and community involvement than Whites (e.g., items 69, 89, 94, 95, 100 and 112), Blacks reported that they had more often been accused of doing things for their own self-interest than Whites. Given the greater community involvement of the Black group, the finding that they perceive more accusations of acting in their own self-interest may possibly be attributed to greater perceived racism. The observed data are consistent with the interpretation that Blacks may feel they are more often accused by others of negative behaviors.

The influence of the items exhibiting DIF on overall test score was examined in three ways. Items which differentially encumbered Blacks were initially dropped from the test, and the overall test scores were re-computed. The same procedure was repeated, dropping only those items which were more difficult for Whites. Finally, all items which were differentially more difficult for one of the 2 subgroups were dropped, and the overall test scores were re-computed. Following each of these steps, t-tests were used to examine differences between racial subgroups on the overall biodata test.

Table 22 reports the means and standard deviations of biodata test performance for each racial subgroup for each of the t-tests described. As reported above, Blacks

**Table 22:**  
**T-tests of Overall Biodata Test Score by**  
**Racial Subgroup Following Deletion of DIF Items**

<b>Biodata Items Excluded from Analysis</b>	<b>Black Mean</b>	<b>SD</b>	<b>White Mean</b>	<b>SD</b>
No Items Excluded*	90.77	14.09	86.33	13.97
Items More Difficult* for Blacks	82.36	13.28	76.21	12.99
Items More Difficult for White	76.61	12.16	75.90	12.41
Items Differentially More Difficult for Either Racial Subgroup	68.20	11.33	65.78	11.42

\* indicates significant difference between groups,  $p < .05$

outperformed Whites on the overall biodata test prior to deletion of items experiencing DIF ( $t(203) = -2.27, p < .05$ ). Logically, dropping biodata items which Blacks found more difficult than Whites exacerbated this difference, ( $t(203) = -3.36, p < .01$ ). Deleting those biodata items which Whites found more difficult had the effect of removing the observed disparity in overall test scores for racial subgroups ( $t(204) = -.41, p > .05$ ). Similarly, discarding all biodata items which were found to differentially encumber one of the two racial groups also had the effect of removing the observed disparity in overall test score ( $t(204) = -1.53, p > .05$ ).

### *Summary*

Blacks outperformed Whites on the biodata test used in the present study, when a rational scoring key was developed for the job of police officer (mean difference = .31). In the absence of actual criterion information, it is unknown whether this subgroup difference is attributable to job-related ability differences between the two racial groups. At the item level of analysis, racial subgroups were found to be differentially encumbered by numerous biodata items. As would be expected, discarding biodata items that either Whites or both racial groups found more difficult had the effect of removing subgroup differences on overall test score.

## **DISCUSSION**

The present study introduced the concept of differential item functioning to biodata employment testing. Figure 1 provided a conceptual model which guided the present research. Examining the model in reverse order, differential responding to biodata items by members of different racial subgroups was proposed to be influenced by cultural value differences between racial subgroups. The adoption of cultural values was proposed to be determined by the individual's racial identity. Racial identity, a psychological variable assessing the individual's perceived racial identification, was thought to be influenced by one's race. In order to discuss the results of analyses based on this model, the present section will be divided into four parts. Initially, a brief description of each of the findings regarding the hypotheses will be discussed. Next, the implications of these results will be explored. The final two sections will address the limitations in the present study, as well as future directions for this research.

### *Hypothesis 1: Race & Racial Identity*

A moderate relationship was expected between race and racial identity. It was thought that rather than classification based on skin color or other physical information, classification based on racial identity would provide a far greater understanding of the individual's psychological nature. Thus, racial identity classification might provide more information regarding the identity of an individual of one demographic race (e.g., Black) who was raised in a neighborhood dominated by members of another race (e.g., Whites). Results indicated that the demographic classification of race was identical to the racial

identity classification of nearly all the Blacks and Whites examined in the present investigation ( $r = .93$ ). Of the 200 individuals examined in the study, only 4 exhibited a racial identity that was not consistent with their demographic racial classification. This finding indicates that in future psychological investigations comparing Blacks and Whites, the assessment of racial identity as a measure of classification of individuals appears unwarranted. A single item assessment of self-reported race provides the same information as a 15 item psychological scale.

*Hypothesis 2: Race vs. Racial Identity, and Cultural Values*

The present study adopted Kluckhohn and Strodtbeck's (1961) conception of cultural values. According to this theory, there exist five cultural values (Human Nature, Person-Nature, Time, Activity, and Relations), each of which has three separate components. Based on the assumption that demographic race and racial identity would be related but distinct concepts (Hypothesis 1), Hypothesis 2 argued that the adoption of cultural values would be more strongly related to an individual's racial identity classification than the individual's demographic race. This hypothesis was not supported by the data. The strong relationship between demographic racial classification and classification based on racial identity precluded any significant findings supporting Hypothesis 2. As discussed below, the lack of empirical support regarding the concept of racial identity is limited to racial identity classification. Racial identity strength was found to influence the adoption of cultural values.

*Hypothesis 3: Racial Subgroups and Cultural Values of the Typical American*

The third hypothesis expressed two expectations. First, it was argued that the cultural value patterns displayed by Black and White racial subgroups would be identical. Secondly, the cultural value patterns, or preference orderings, would be consistent with theory-based expectations for the typical American. Empirical evidence suggests that Black and White Americans share highly similar cultural value patterns.

The cultural value patterns produced for these two racial subgroups were not completely consistent with theory for the typical American. Based on theoretical expectations of the "typical" American, it was expected the dominant preference for the basic view of human nature would be either a "mixed" or "evil" view. Both Blacks and Whites endorsed the "evil" view less frequently than either the "good" or "mixed" alternatives. Similarly, the typical American was expected to most strongly endorse the "mastery over nature" view of the relationship between humans and the natural world. Both Blacks and Whites endorsed this view with the least frequency of the three alternative views. However, inspection of the overall cultural value patterns produced by Blacks and Whites provides empirical confirmation of many of the cultural value preferences for the typical American espoused by theoreticians such as Kluckhohn and Strodtbeck (1961).

*Hypothesis 4: Cultural Value Differences between Racial Subgroups*

The greater interest of the present research was the examination of differences between racial subgroups. Multiple analytical techniques were used to investigate the possibility that Blacks and Whites differ in their endorsement of cultural values. Both t-tests and Cohen's (1977) definition of a small effect size were used as criteria for

determining the presence of subgroup differences. Consistent with the writings of Mbiti (1970) and McFadden and Gbekobou (1984), Blacks expressed greater preference for the cultural values of Subjugation-to-Nature, Past, and Lineal. However, Blacks' preferences for the cultural value alternatives of Evil, Future, and Doing were surprising based on theory that indicated Whites would prefer these cultural values.

Hierarchical regression was used to examine several possible alternative explanations for the findings regarding racial subgroup differences in cultural value preferences. These analyses revealed that Blacks' preferences for the Doing alternative could be attributed to socioeconomic differences between the two groups. Racial subgroup differences in the tendency to respond in a socially desirable manner were not found to account for the expressed differences in cultural values. However, the strength of an individual's racial identity was found to moderate the relationship between race and preferences for certain cultural values. Specifically, the Mastery over Nature alternative was preferred by Whites with high racial identity. The previous finding that racial subgroup differences existed in preferences for the Lineal alternative was qualified by the finding that racial identity strength moderated this relationship. The Lineal alternative was most likely to be endorsed by Blacks low in racial identity strength, but this preference was not observed among Blacks high in racial identity strength. The Individual cultural value alternative was endorsed most frequently by Whites low in racial identity strength, and Blacks with very high racial identity strength.

Cultural value differences clearly exist between Blacks and Whites, although these differences are not always consistent with theoretical expectations. In order to fully understand differences in preferences for several cultural values, the strength of the individual's racial identity must also be considered.

*Hypothesis 5: Cultural Values Differences and Biodata Responses*

The fifth hypothesis examined whether cultural value differences could influence responses to biodata employment items. Overall, 21% of the 107 biodata employment items were found to be influenced by the cultural values of the respondent. The individual's Human Nature orientation seemed especially likely to influence biodata item responding -- 4 of the 5 biodata items classified as reflecting the Human Nature orientation were found to be influenced by the individual's endorsement of this cultural value. Similarly, 6 of the 15 biodata items a priori classified as reflecting a Time orientation were found to be influenced by the individual's endorsement of the cultural values relating to Time. The individual's Activity orientation was also found to influence biodata responses. Of the 41 items classified a priori as reflecting one of the alternatives of the Activity orientation, 8 items were found to be influenced by the cultural values of the respondent.

In order to conduct the present study, biodata items from several databases were scanned for biodata items which might reflect cultural values. Of these databases, relatively few items were classified as reflecting the cultural values of Human Nature or Time. In contrast, these databases contained many items which were classified as reflecting the cultural values orientations of Activity and Relations. Responses to these biodata items were found to be far less influenced by the cultural values of the respondent.

*Hypothesis 6: Racial Subgroups and Biodata Responses (& Cultural Values, too!)*

After statistically controlling for overall test score differences, 1/3 of the biodata items included in the present study were found to exhibit differential item functioning

between Blacks and Whites. Blacks and Whites were differentially attracted to response options for a considerable number of biodata items. Although the finding that such a large number of biodata items exhibited DIF is important in itself, the purpose of the present study was to investigate a priori hypotheses regarding the influences of DIF on biodata items. The racial subgroups were found to be differentially attracted to response options of biodata items consistent with a priori expectations for 18 of the 107 biodata items. Thus, although DIF was found in this dataset for approximately 33% of the items, the DIF was consistent with theoretical expectations for half of these items (18 of 35), or 17% of the total set of items. Although these findings do not provide overwhelming support for the hypothesis, they certainly indicate support for the idea that a theoretical understanding of cultural values can be used to predict subgroup DIF on biodata instruments. The lack of overwhelming support for the hypothesis is attributable, in part, to the inconsistency between theoretical expectations regarding subgroup differences for cultural values, and actual empirical findings regarding these differences.

Sample size limitations precluded a direct analysis of the relationship between cultural values, racial subgroup, and biodata option choice. However, 9 biodata items were found to be influenced by both the cultural values and race of the respondent. Again, 4 of the 5 biodata items classified as reflecting a Human Nature orientation were identified. It appears that the inclusion of biodata items which assess the individual's view of basic human nature are likely to lead to significant response differences between Blacks and Whites. The remaining 5 items which were found to be influenced by both cultural values and race were composed of 2 items thought to reflect the Activity orientation, 2 items reflecting the Relations orientation, and a single item assessing the Time orientation.

*Exploratory Analysis 1: Variance in Race*

Citing the current controversy in psychology over use of the construct of race, the present study investigated the possibility that measured demographic variables and cognitive ability might account for the majority of the variance in the construct of race. However, 5 of the cultural values subscales and 21 of the biodata items were shown to explain additional variance in race after controlling for cognitive performance, sex, father education, mother education, income, and urbanicity. This finding indicates that although the demographic variables used in this study do account for part of the variance in race, the construct of race assesses more than these simple demographic variables.

*Exploratory Analysis 2: DIF and Overall Test Score*

In order to examine the degree to which the observed difference in biodata test score between Blacks and Whites was attributable to items that exhibited DIF, all DIF items were removed from the computation of overall test score. Quite predictably, this resulted in the removal of the significant difference in test score between racial subgroups. Removal of items showing DIF that encumbered only Whites also removed the subgroup difference in overall test score. Removal of items exhibiting DIF that encumbered only Blacks increased the size of the subgroup mean difference to .43 standard deviation units. Note that in the absence of criterion information, it is unknown whether the removal of such items would improve, impair, or even affect, the validity of the biodata test.



## **Implications and Conclusions**

The results of the present study have several implications for three distinct research areas. First, implications of findings regarding the construct of racial identity will be discussed. Next, the implications of findings regarding cultural value differences between racial subgroups will be considered. Finally, the impact of current study's results on the examination of DIF on biodata tests will be examined.

### ***Racial Identity***

The utility of the construct of racial identity was examined in the present study. Unlike previous research on the construct, racial identity was conceived here to have two components: a classification component, based on the group of people the individual identified as feeling closest to, spending the majority of their time with, and feeling most comfortable among; and a second component which assessed the degree to which the individual perceived their racial identity to be important to their sense of self. Based on the results of this study, the assessment of racial identity for classification purposes between Blacks and Whites appears unnecessary. Psychological assessment of racial identity provided classification results that were virtually identical to self-reported race. However, the present study's novel use of the strength of an individual's racial identity was found to explain additional variance in the adoption of several cultural values. Perhaps racial identity strength would be a theoretically useful construct for other research investigations examining racial subgroup differences. The degree to which race is perceived to be an important part of the individual's personality has been neglected in research examining racial subgroup differences.

### *Racial Subgroups and Cultural Values*

The present study clearly indicates that present theories of cultural values proposed by theoreticians such as Kluckhohn and Strodtbeck (1961), Mbiti (1970), and McFadden and Gbekobou (1984) require revision. The present study found that Blacks are more likely than Whites to endorse an evil view of basic human nature, were more likely to feel that they were at the whim of Nature, that the past is a good source of instruction, and that thinking about the future is important. Blacks for whom their racial identity was not very important were more likely than Whites to endorse the ideals that societal authorities should be respected and obeyed. Blacks for whom their racial identity was extremely important were more likely than Whites low in racial identity strength to endorse the idea that individual goals should supersede group goals.

Several of these findings concerning preference differences between cultural values are consistent with an earlier empirical study conducted by Carter (1990). This researcher found that relative to Whites, Blacks viewed human nature as more evil, were more subjugated to Nature, preferred the past, were more likely to adopt a long-term self-development goal (i.e., preferred the Being-in-Becoming alternative), and were more likely to feel power and authority should be gained through one's age and role in the social hierarchy (i.e., Lineal alternative).

Taken together, these studies provide evidence that, contrary to theoretical expectations, Blacks view human nature as more evil than Whites. Carter (1990) suggests this difference may be attributable to Blacks' experience with racism. Perceptions of racism in a White-dominated society may lead Blacks to believe that basic human nature -- no matter what the skin color -- is evil.

Both studies also found Blacks believe relationships should be dominated by the individual's role in society, though the present study qualified this finding. Blacks low in

racial identity strength are more likely than Whites or other Blacks to endorse this view. Still, this finding is interesting, and suggests a greater willingness on the behalf of Blacks to follow the judgment of authority, rather than their own goals. Blacks who feel very strongly that their racial identity is important to their sense of self, on the other hand, are less likely to feel endorse the Lineal perspective.

One admittedly speculative explanation for this finding is that Blacks who fail to examine the impact of race on their own lives would likewise be unlikely to thoughtfully consider the judgment of those in authority. Blacks who strongly believe that race is important to their sense of self, on the other hand, have perhaps consciously considered, and rejected, the idea that one should respect authority for authority's sake. This argument is strengthened by the possibility that those Blacks who consider race to be extremely important are also likely to be those who perceive greater racism in society. Individuals in authority may be viewed, either directly or indirectly, as the perpetrators of racism. Blacks who are high in racial identity strength would thus be less willing to heedlessly abide by the judgments of those in authority. Although alternative explanations for this finding undoubtedly exist, it is clear that traditional theories which assert that Blacks are likely to maintain a Lineal perspective of the Relations orientation require revision. The empirical evidence indicates that only those Blacks that do not strongly consider race to be an important part of their personality are likely to believe authority should be based on age and positional power.

It is important to note that both the present study and Carter's earlier investigation utilized the same measure of cultural values, though these scales were slightly modified in the present study. If we are to better understand the cultural values of Blacks and Whites in America, additional investigations of the assumed values of these groups is required. Although the present study replicates several of Carter's findings, further

replications utilizing distinct measures may provide even greater understanding of the cultural values of these groups.

### *Subgroup Differences in Biodata Responding*

The observed cultural value differences between racial subgroups did not consistently contribute to the observed subgroup differences in responses to biodata items. This was evidenced by the finding that although the responses of 22 biodata items were influenced by the cultural values of the respondent, the responses to only 9 of these items were also influenced by the race of the respondent.

However, the explication of a priori hypotheses regarding the influence of cultural values on biodata responding was far from futile. First, it was empirically demonstrated that the respondent's cultural values can influence response choice selection -- in the present study, 22/107 or 21% of the responses to biodata items were influenced by the cultural values of the respondent. Second, the items in the present study were initially selected for inclusion in the study only if it was thought to reflect 1 of the 5 cultural value orientations. Racial subgroup differences in response choice selection were found for 1/3 of the biodata items included in the study.

Although test bias cannot be equated with item bias or differential item functioning, it is surprising that 1/3 of the items exhibited DIF between Blacks and Whites. This finding is particularly surprising considering that biodata, at least on the test level, have generally not exhibited race differences (Mumford & Stokes, 1992; Reilly & Chao, 1982). One possible explanation for this conflict with previous studies is that actual biodata tests used for employment purposes may include far fewer items reflecting cultural values than were intentionally included in this study. However, even if the presence of cultural value-laden items is not a widespread problem, it is a potential

problem. Thus, biodata items can, and perhaps should, be rationally screened for the inclusion of cultural values prior to use in a selection instrument. Any item which is found to reflect a cultural value known to differentiate racial subgroups would be flagged for possible deletion. This step would be especially important if the validation strategy for the biodata instrument did not include criterion-related instrument validation. Consideration of the degree to which the biodata item accurately assesses a job-relevant KSA could determine whether the item should be retained or omitted. Of course, the item may be initially retained for empirical examination of criterion-related validity and test fairness. Even here, however, sample constraints on the number of racial minorities included in the validation study, or concerns with the number of biodata items to be included in a pre-test, may warrant the exclusion of biodata items which are judged a priori to exhibit cultural values which are likely to lead to racial subgroup differences.

Which items are most likely to lead to racial subgroup differences? The results of the present study provide a clear indication that items which inquire about the respondent's view of basic human nature are extremely likely to lead to DIF between Blacks and Whites.

Further, 39% of the biodata items which were a priori classified as reflecting a Relations orientation were also found to exhibit DIF. Using the scoring key developed for the job of police officer, 4 of the 14 biodata items which were classified as reflecting the Relations orientation, and were actually found to exhibit DIF, did not impair performance for either racial subgroup.

Three of the 14 Relations items were found to be differentially more difficult for Blacks. No consistent trends were detectable in the interpretation of these 3 biodata items. The item "Would you rather play in a dance-band than be a soloist for an opera" was intended to assess a propensity for teamwork vs. individual performance. Blacks were found to be more likely than Whites to report wanting to be a soloist. The second

item was commented upon above. Blacks reported a greater number of instances of being accused of acting in self-interest than Whites. The final Relations item which was differentially more difficult for Blacks inquired about strategy when working on a very important project. Whites received greater credit for their response “You would minimally attend to other work responsibilities realizing that you could not give all your time to the more important project”, than was awarded to Blacks for the response “You would attempt to divide up your time equally”. This item had been classified as reflecting the Relations orientation based on the expectation that Blacks would be differentially attracted to the option, “You would ask your supervisor/boss to find someone else to help you”. This result was not found.

Seven of the 14 Relations items were found to be differentially more difficult for Whites. Several of these items assessed community/civic involvement, or recognition for such involvement. Whites consistently reported less participation in civic affairs than Blacks. This finding is consistent with Olsen’s (1970) review which reported that regarding voluntary participation, “the general tendency for Blacks to be more active than Whites is found to occur in every type of activity investigated” (p. 682). Whites also scored lower than Blacks on several of the Relations items due to an apparent willingness to report negative behaviors. Relative to Blacks, Whites reported more instances of disrespect to teachers and hurting a friend in order to benefit themselves. Whites were also likely to report fewer observations of people putting friendships and personal goals aside in order to achieve group goals. It is important to note that this study cannot determine whether these differences are attributable to actual subgroup differences, or merely reflect differences in the way the two groups respond to employment items. However, evidence supporting the latter possibility is provided by the finding that Blacks achieved higher scores than Whites on both social desirability scales examined in the present study.

The finding of Black-White subgroup differences in response to biodata items assessing interpersonal relations is consistent with a previous study conducted by Schmitt and Pulakos (under review). In their study of DIF in biodata items administered to incumbents at a large federal agency, Schmitt and Pulakos found that 9 of 15 items intended to assess interpersonal relations skills exhibited DIF. Unfortunately, the increased use of team-based work processes is likely to require the inclusion of an increased proportion of biodata items which assess interpersonal relations. The findings in the present study of cultural value differences between Blacks and Whites regarding the Lineal alternative may provide some insight into the types of biodata items to avoid. Blacks low in racial identity strength were more likely to endorse the notion that power and authority are gained by age and role in the social hierarchy. Perhaps these individuals, then, would be expected to be more likely than Whites and Blacks for whom racial identity is very important to select biodata options promoting vertical authority.

Biodata items classified as reflecting the Activity orientation which were most frequently flagged for DIF often included elements referencing the degree to which the individual enjoyed hard work, or experienced guilt when not working. Five biodata items which included elements referring to hard work and/or guilt associated with a lack of hard work exhibited DIF. Of these items, the scoring key used in this study found that 3 items were equally difficult for both racial subgroups. The remaining 2 items were found to be more difficult for Blacks. Blacks reported liking hard work less, and felt less bothered when they were unable to accomplish a chore.

Finally, although only two items were included in the present study which assessed attitudes toward disciplining a child, both items exhibited differential responding between racial subgroups. Whereas Blacks preferred options regarding punishment, Whites preferred reasoning with children. These differences may reflect actual racial

subgroup differences in child rearing practices. The inclusion of similar items on a biodata instrument are likely to lead to DIF between Blacks and Whites.

### *Recommendations*

The results of the present study provide several suggestions for constructors of biodata instruments who wish to avoid differential item functioning between Blacks and Whites. It is assumed biodata items are initially written or selected to assess specific KSA dimensions as specified by job analysis. The results of the present study strongly suggest the need for careful, rational inspection of each item under consideration for possible inclusion in the biodata instrument. Biodata items which assess the individual's perception of basic human nature, involvement in civic events, attitudes toward hard work or guilt associated with not working, and which reflect child rearing practices are likely to lead to DIF between the two racial groups. These biodata items should be dropped from the biodata instrument if racial subgroup DIF is a significant concern. Special attention should also be given to biodata items which reflect the Doing orientation, and the Future alternative of the Time orientation. Of course, validity must remain the pivotal criterion for determination of whether or not to include a specific biodata item in a test instrument. However, test makers can thoughtfully construct biodata items which continue to assess job-related KSAs without including any elements in the above list. Selection procedures which do not directly examine differential validity, or require a very limited number of items for pre-testing, should be particularly careful to avoid biodata items which contain any of the above elements.

### **Study Limitations**

Several limitations in the present study warrant a cautious interpretation of study findings. As in the previous section, the limitations of the study will be discussed in terms of the findings regarding racial identity, racial subgroups and cultural values, and finally subgroup differences and biodata responding.

#### ***Racial Identity***

The present study investigated the differences between Blacks and Whites in their cultural values and in responses to biodata employment items. The conceptual model in Figure 1 asserts that racial identity will be a distinct construct from demographic race, and would be expected to provide greater information regarding the adoption of cultural values than mere demographic classification. These assertions did not receive empirical support. Blacks were found to nearly unanimously adopt an African American racial identity, and Whites were found to nearly unanimously adopt a White American racial identity. Would the same consistency between racial identity and demographic racial classification also be found for Asians and Hispanics? The present study cannot address this question, since only Blacks and Whites were assessed. However, the dark skin color of Blacks has been argued as a barrier to assimilation into White culture. Other minority groups such as Asians and Hispanics may have an easier time "passing" as a member of the White majority group, and thus may be more likely than Blacks to choose a White racial identity. The finding that classification of individuals based on racial identity provides little information beyond demographic classification is limited to Blacks and Whites.

### *Racial Subgroups and Cultural Values*

A major limitation of the interpretation of results regarding cultural value differences between racial subgroups is the disappointing internal consistency reliability estimates for the scales used to assess cultural values. Although the 15 10-item scales proposed by Kohls, Carter, & Helms (1984) were subjected to principal components analysis and rational inspection, the reliabilities of the resulting modified scales increased only slightly from a mean of .66 to a mean of .69. These poor reliability estimates may obscure additional differences in cultural values between Blacks and Whites. On the other hand, the findings regarding racial subgroup differences for several cultural values is all the more impressive considering the poor reliability of these scales.

The hypotheses examined in the present study were in large part based on theoretical expectations of subgroup differences in the adoption of cultural values. Combined with Carter's (1990) findings, the results of the present study clearly suggest that this theory is in need of revision. Revised theoretical explanations for the observed differences in cultural values between racial subgroups is evidently required.

The composition of the sample also leads to a possible limitation of the findings regarding subgroup differences between Blacks and Whites. The sample was composed solely of college students. Are college students of each racial subgroup representative of the actual population? Although this type of question is asked reflexively in the Limitations section of any research project, it may have special significance for the present study. Why? One possibility is that the members of the racial subgroups that go to college may be very different from those who do not attend college. For instance, consider the theoretically inconsistent finding that Blacks are more likely to be planners of future events than are Whites. Perhaps this finding merely reflects differences in opportunities between the two racial subgroups. If Blacks are disadvantaged socio-

economically and educationally in comparison to Whites, only those individuals who can successfully plan for the future would actually be expected to attend college. If Whites, on the other hand, experienced greater opportunity to attend college, this racial subgroup would not need to be particularly future-oriented in order to attend college. Thus, the observed Black-White difference in future orientation may possibly be attributable to the sample used -- college students. The interpretation of findings regarding other differences between racial subgroups must also be considered in the context of the limitations of this sample.

### *Racial Subgroups and Biodata Responding*

Perhaps the most obvious potential limitation to the results regarding subgroup differences in responses to biodata employment items is that subjects were administered the biodata items in an experimental, instead of actual pre-employment, setting. Subjects were asked to "imagine" they were applying for a job in a local law enforcement agency, and were asked to respond as they would if they were applying for the job. To aid motivation, participants were instructed that the 6 highest scorers would each receive \$25.00 cash. Despite these interventions, it is likely that the motivation of actual job applicants would be considerably higher. The impact of these potential motivation differences between research participants and actual job applicants on observed subgroup differences is unknown.

Results indicate that cultural values influenced option choice selection for 21% of the biodata items examined. A potential criticism of this finding is that it may merely be an empirical demonstration that two different measures of the same construct are related. If valid, does this criticism diminish the results or implications of the present study? In the opinion of the present author, it does not. From a practical standpoint, constructors of

biodata employment tests would hope to avoid any items which are likely to lead to racial subgroup differences in employment testing when valid items without the subgroup difference can be identified. Thus, knowledge of which cultural values should be avoided in the construction of a biodata instrument is highly valuable information. From a theoretical standpoint, this contribution is very exciting. Research examining differential item functioning is routinely conducted post hoc on cognitive ability tests. This research has failed to produce findings which can be used a priori to determine which items, if any, might lead to DIF. The present study generated a priori hypotheses regarding which biodata items would experience DIF -- and findings indicate that fully 1/3 of the items suspected to exhibit DIF, did!

A serious limitation of the present study is that biodata items were included only if they were a priori classified as reflecting 1 of the 5 cultural value orientations. As just stated, 1/3 of these biodata items examined demonstrated DIF between racial subgroups. Unfortunately, the present study did not include "control" biodata items which were a priori classified as reflecting none of the cultural values. Inclusion of such items would allow a direct examination of DIF rates between biodata items thought to be neutral with respect to Black-White cultural differences, and those a priori classified as reflecting cultural values. In the absence of the inclusion of such "control" biodata items, the attribution of DIF to cultural values is severely weakened. However, the finding that 1/3 of the biodata items included in the present study exhibited DIF across racial subgroups does seem particularly surprising, considering that researchers have argued that biodata tests have rarely shown racial subgroup differences (Mumford & Stokes, 1992; Reilly & Chao, 1982).

## **Future Directions**

In the grand tradition of science, the present study asked a few questions, partially answered some of them, and generated many, many more. The need for several clarifications and future studies has been strongly suggested throughout this paper. This final section will consider some areas of potentially fruitful future research.

The main goal of the present study was to provide an initial attempt at providing a priori hypotheses regarding which biodata items might be expected to exhibit DIF between racial subgroups. In order to accomplish this goal, cultural value differences between racial subgroups were explored, and hypotheses were generated. The concept of culture is enormous, and researchers have had a very difficult time limiting the definition of the concept. As such, culture can mean many different things. Culture was defined in the present study in terms of a people's system of underlying values. Other conceptions of culture may generate additional interesting hypotheses worthy of investigation. Differential item functioning research examining cognitive ability tests has demonstrated that post hoc investigations provide little clarity or understanding. In order to understand why racial subgroups are differentially attracted to different biodata response options, it is imperative that researchers employ the use of a defensible theoretical framework.

The present study limited its focus to the examination of Black-White differences in responses to biodata employment items. Other racial subgroups deserve research attention as well. Indeed, some racial subgroups such as Asians and Hispanics which are relative newcomers to American culture may be far more interesting to investigate.

Cultural differences between these groups and the "typical" American may be expected to be far more disparate than between Blacks and Whites in America. Further, our interest in subgroup differences certainly need not be limited to race. Examination of the burgeoning literature examining sex differences might also lead to the generation of a priori hypotheses regarding male-female differences in responses to employment tests. Additional employment tests should also be investigated for potential for DIF. The present study revealed that Blacks and Whites strongly differ in their perception of basic human nature. How would such a difference affect responses to integrity tests? Would the type of integrity item asked influence DIF? For example, we might find different rates of DIF for items which assess actual past behaviors, vs. perceptions of frequency of such behaviors in the general public. Investigation of DIF on low fidelity simulations (Motowidlo, Dunnette, & Carter, 1990; Motowidlo & Tippins, 1993) would also be potentially fruitful. Job applicants administered a low fidelity simulation are presented with a series of ambiguous situations and for each are asked which of several options they feel would be the best course of action. Subgroup differences in response tendencies might be expected to be exhibited on subjective employment tests such as these as well.

Future research might also include criterion data in DIF examinations. Such information would allow direct examination of how subgroup differences at the item level influence subgroup differences at the test level. The present study limited its investigation to subgroup differences in responding to biodata items. Ultimately, concerns with subgroup differences are most important when considered at the test

level in relation to validity. Although tests which exhibit differential validity across racial subgroups are legally defensible in the presence of acceptable criterion-related validity, such tests could be avoided if composed of valid items which do not exhibit differential validity. Further research is needed to determine the relationship between differential item functioning and test bias. The a priori classification of subjective employment items which are likely to exhibit DIF may help test constructors in avoiding problems associated with differential validity.

Despite recent criticisms of affirmative action policies, it is clear that societal concerns with issues of test fairness and test bias will remain at the forefront of personnel selection decisions. The examination of item-level subgroup differences on employment tests is just now in its formative stages. Future research investigations of the influences of differential item functioning in employment items have the potential to make an immediate impact on the selection procedures used to form the American workforce.

## **APPENDIX A**

## **Appendix A**

### **Racial Identity Classification:**

For each of the following, choose the group with whom you feel the stem most closely applies:

1. I identify most strongly with:
  - A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
2. The heroes with whom I identify most tend to be:
  - A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
3. My most important role models are most often:
  - A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
4. The people with whom I share the closest emotional bonds tend to be:
  - A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans

5. The entertainers whom I enjoy most in film, stage, and stand-up comedy tend to be:
- A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
6. I currently spend most of my social time with:
- A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
7. If I had to choose a single racial group, I would say that my behaviors are consistent with those associated with:
- A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
8. If prior to being born I could select a racial identity, I would choose:
- A. African American
  - B. Asian American
  - C. Hispanic American
  - D. Native American
  - E. White American
9. If given the opportunity, I'd spend most of my time with:
- A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
10. I would prefer a romantic partner whose racial identity was:
- A. African American
  - B. Asian American
  - C. Hispanic American
  - D. Native American
  - E. White American



11. Most of the sports figures I idolize tend to be:
- A. African American
  - B. Asian American
  - C. Hispanic American
  - D. Native American
  - E. White American
12. The clubs and social organizations I belong to are composed primarily of:
- A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
13. The musicians whom I enjoy most tend to be:
- A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans
14. Regarding the group of people I would refer to as my "community", I would say most of these individuals would be:
- A. African American
  - B. Asian American
  - C. Hispanic American
  - D. Native American
  - E. White American
15. If I were to choose a group of coworkers, I would probably choose a majority of the individuals to be:
- A. African Americans
  - B. Asian Americans
  - C. Hispanic Americans
  - D. Native Americans
  - E. White Americans

**Racial Identity Strength:**

**Instructions:** For the following items, indicate your level of agreement on the following scale:

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

- 1.\* My race is an important part of who I am.
2. I tend to socialize with members of my own racial group.
3. I've never really given much thought to what it would be like to be a member of some other race (R).
4. I've never given much thought to the racial experiences of others (R).
- 5.\* I am proud to be a member of my race.
6. I believe there are more positive characteristics associated with other races than my own (R).
7. Generally I don't give much thought to racial issues (R).
- 8.\* Matters of race are very important to me.
- 9.\* I am strongly committed to my racial group membership.
- 10.\* I strongly identify with members of my own race.
- 11.\* I wish I were a member of some other race (R).
- 12.\* I rarely consider what race I am. (R)
13. If given the opportunity, I'd spend the vast majority of my time with members of my own racial group.
14. I consciously seek out members of my own racial group for social activities.
15. I believe we should deemphasize racial differences (R).

16. As a youth, I was primarily exposed to individuals of my own racial group.
- 17.\* I think one's racial identity is an integral part of one's personality.
18. I generally feel the most "attached" to other members of my own race.
19. Some people think I spend too much time acting like people of some race other than my own (R).
20. I generally value the opinions of individuals of my racial identity more than I value the opinions of individuals of other racial groups.

---

\* indicates item was included in final scale



## **Intercultural Values Inventory**

Kohls, Carter, Helms, 1984

The following statements are statements of values. For each statement, indicate the degree to which you believe the statement reflects a value that you hold, that is, a value that you live your life or would raise your children by.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

### **A. HUMAN NATURE ORIENTATION**

What is the innate character of human nature?

#### ***EVIL***

- 3.\* Most people can't be trusted. It pays to be suspicious and wary of others. In the end, you can only trust yourself.
- 5.\* You've got to constantly look out for your own welfare. It's a dog-eat-dog world; it's everyone for themselves. If you don't look out for yourself, no one else will.
- 8.\* Once a thief, always a thief.
- 12.\* Two words of advice on friends: Beware of false friends, and never tell your best friend a secret.
- 15. A known criminal should be considered guilty until proven innocent.
- 17.\* Capital punishment is the only language criminals understand.
- 19.\* Never trust a stranger.
- 23.\* We need jails and prisons because people have an inclination toward evil. No matter how you look at it, some people are born criminals.
- 26.\* When the chips are down, most people will walk all over other people if it will help them achieve their own goals. People can be counted on to act in their own self-interest.

29. People are born as sinful creatures, and humans have a natural inclination to follow after evil.

### *MIXED*

- 1.\* There are both evil people and good people in the world, and you have to check people out to find out which they are. Only in that way can you know which ones to associate with.
- 6.\* Each person's character is like a blank page. It waits to be written upon, by the experiences each individual encounters in life. These will ultimately differentiate prisoner from jailor.
7. By their fruits, you shall know them.
- 11.\* When your children are young, it pays to take time to give them your attention and to take the effort to train them in the right ways. Left alone, they can go wrong just as easily as right.
13. Birds of a feather flock together.
- 16.\* To trust people, you have to get to know them first.
- 21.\* People, like coins, have two sides -- good and evil.
- 24.\* There will always be people who will extend a hand to help, and there will also be those who will try to chop yours off.
- 25.\* People are not born "good" or "evil"; instead, they are born like a blank slate, and given certain experiences and the effects of external forces, eventually develop into good or evil beings.
28. Some people are best suited to war and others to peace.

### *GOOD*

- 2.\* Most people are genuinely interested in the well being of their fellow humans.
4. Human beings have been created in God's image.

- 9.\* Every single person has within themselves the potential to do great things.
- 10.\* Deep down, I really believe that people are good at heart.
- 14.\* As a general rule, I'm willing to trust people and give them a chance until, through wrong actions, they prove themselves unworthy of my trust.
- 18.\* A person should always be considered innocent until proven guilty.
- 20. I've never met a person I didn't like.
- 22.\* There's always someone who will lend a helping hand when you're in need.
- 27.\* Children need guidance and support from parents and adults, but even at a very young age, they are generally capable of distinguishing right from wrong.
- 30. Love conquers all.

## **B. PERSON-NATURE ORIENTATION**

**What is the proper relationship of people to nature (and to the supernatural)?**

### ***SUBJUGATION***

- 31.\* Life is generally determined by external forces, such as God, fate, or genetics, over which people have little control.**
- 36.\* A person cannot surpass the conditions life has set. What will be will be.**
- 37.\* We shall have a good harvest only if God sends the rains.**
- 40. A person made humble by acknowledging one's own inferiority to the elements is much more powerful than one who challenges them.**
- 44.\* People should never be so presumptuous as to think that they are in control of their own life.**
- 48. Our parents have taught us the way their parents taught them. Their methods have always worked in the past, and it honors their memory to continue to use them.**
- 50.\* People are but puppets on the great stage of life. We must accept, as graciously as we can, the conditions life has set for us.**
- 54.\* Catastrophes are a part of life; they can't be avoided. If it's our destiny, they will come, and nothing can stop them.**
- 56.\* Life is like a leaf floating on a stream. It follows the current, and sometimes it goes under.**
- 60.\* My life is in God's hands.**

*HARMONY*

- 33.\* People should, in every way, attempt to live in complete harmony with nature.
- 35.\* Let nature be your teacher.
- 39.\* People should never do anything to pollute their precious earth.
- 42.\* Each person is but one component of nature and should, at all times, respect the integrity of all other forms of life.
- 43. Humans and nature are interdependent.
- 46.\* Human beings and nature in combination make a powerful team.
- 49.\* We must dance to the song of the earth.
- 53.\* People should always remember that we came from the earth, and ultimately, we will return to it.
- 55.\* We are all roommates on Planet Earth, so let's take care of our home.
- 58.\* Life flows naturally in your direction when you are in balance with yourself and with nature. When you're one with nature, you're one with yourself.

*MASTERY*

- 32.\* All natural resources were placed on this earth to be at people's disposal.
- 34.\* Humans are nature's greatest accomplishment, and people have rightly been assigned the task of controlling and perfecting nature.
- 38.\* As people have learned more and more to conquer nature and reap nature's treasures, the more comfortable life has become.
- 41. Each person is the Captain of their Ship, the Master of their Fate.
- 45. I predict that people will have overcome cancer within ten years' time.



- 47.\* "Cloud seeding" to produce rain is one of the most important innovations of our time. Now it is possible to do something about the weather instead of just complaining about it.
- 51.\* The human challenge is to conquer and control nature. Everything from air conditioning to the "green revolution" has resulted from our having met this challenge.
- 52.\* Our highly technological society has reached its high state of civilization by ever striving to control the forces of nature which, in their raw, unbridled state, stand in the way of human advancement.
- 57.\* The human drive to control the forces of nature has led to the extensive development of science and technology, and this has been a good thing for humankind.
- 59.\* Even "natural" calamities, such as volcanoes, could be controlled if only we would apply enough effort, intelligence and money to this end. It's only a matter of time until we can control all of nature for our own good.

### C. TIME ORIENTATION

What is the temporal focus of human life?

#### *PAST*

- 63.\* People should be guided by history and attempt to copy the past.
66. Mothers and grandmothers have been taking care of children for thousands of years and doing a fine job of it. It would be better to maintain this tradition than to place our children in day care centers that are taught by strangers with degrees.
- 67.\* Children should model their lives after those of their parents and grandparents and after the heroes of our society.
72. The wisdom and sacrifices of our ancestors have made us a great nation.

74. I look back with fondness on the days of my childhood. Those were the happiest days of my life.
- 77.\* Let's build on our past, not destroy it. Change is destructive, for it kills the traditions of our proud past.
- 80.\* Never question your elders. Follow their advice and you won't go wrong. Tradition is the foundation of youth.
- 83.\* There are no real heroes today. For the really great men and women, we must look to our golden past.
- 87.\* Since we've always done it that way, why change now? What was good enough for my parents is good enough for me.
89. A person's roots are very important. Knowing who you were helps you know who you are.

### *PRESENT*

- 61.\* Don't worry about tomorrow; enjoy today.
- 64.\* I was born in the past, and I will die some time in the future, but for right now, I'm living for today.
- 68.\* Look to this day, for yesterday is but a dream and tomorrow is only a vision.
- 71.\* Eat, drink, and be merry, for tomorrow you may die.
- 73.\* The present moment is everything. Let's make the most of it.
- 78.\* Live every day as if it were the only day that counts.
- 81.\* Be here now; for tomorrow is uncertain and yesterday is but a memory.
- 82.\* Take time to stop and smell the flowers as you go through life. Live every day to the fullest.
- 86.\* Today is a new beginning for the rest of your life.
- 88.\* There is, in reality, no "yesterday" and no "tomorrow." Therefore, it is important to experience today.

*FUTURE*

- 62.\* Planning and goal-setting make it possible for people to accomplish miracles.
- 65.\* Plan your life. Set realistic yet challenging goals, and then spend the rest of your life achieving them.
- 69.\* Build a foundation today for a better tomorrow. It pays to scrimp and save now so you will have something to live on in your old age.
- 70. Life flows in only one direction; therefore, you must keep up with the flow.
- 75.\* If you don't move forward, you're moving backwards. He who does not look ahead is condemned to remain behind.
- 76.\* Wise people map out their plans for the future; they know what they want to be doing five, ten and twenty years from now.
- 79.\* Tomorrow will be a better day; the best is yet to come, so look to the future—it promises more than the past.
- 84.\* The ability to look ahead and plan for the future makes humans different from other animals.
- 85.\* You should plan ahead for the unexpected, by putting aside a little money for a "rainy day~.
- 90.\* We should plan in such a way so as to conserve our resources for future generations.

**D. ACTIVITY ORIENTATION****How do people profitably occupy themselves?***BEING*

- 91. It's not necessary to accomplish great things in life to feel your life has been worthwhile. It's enough to just "be".
- 96.\* Relax, be yourself, and enjoy life as it comes.

97. Feelings, emotions, and the interpersonal relationships between people are more important than anything else in life.
- 101.\* To love is better than to do; to be is better than to have.
- 105.\* Every person, by definition, is a significant, worthwhile being, whether they actually contribute anything to society or not.
- 107.\* People's importance should not be judged by any acts they perform. Rather their importance stems from their mere existence.
- 109.\* Being a good person is more important than achieving success.
- 114.\* Being happy and contented is what life is really all about.
115. I just want to lead a quiet, simple life. I don't want to be rich or famous.
- 119.\* What a person is is more important than what they do.

### *BEING-IN-BECOMING*

- 92.\* The main goal in life is self-enlightenment.
94. Those who learn to live with loneliness come to know themselves and to understand life in the process.
- 99.\* The happiness that people search for can only be found within themselves.
- 100.\* Know thyself.
- 104.\* It's more important to pay attention to your inner development than to try to "get ahead" in life.
106. Everything I need to know to survive, I already have.
111. Do not look outward, but concern yourself only with the world within.
- 113.\* Self-actualization should be one of every person's primary goals in life.
- 116.\* People's main purpose for being placed on this earth is for their own inner development.
118. Meditation will enable a person to gain all of life's secrets.

*DOING*

- 93. If people work hard and apply themselves fully, their efforts will be rewarded in material ways.
- 95.\* To achieve anything, you have to at least make an effort. Anything worth having is worth working for.
- 98. The happy person is the one who never sits still but who is constantly involved in productive activity.
- 102.\* You should continually work and strive to make this world a better place in which to live.
- 103. Get out there and fight, and fight to win!
- 108.\* Hard work and sacrifice are always rewarded.
- 110.\* Establish your priorities; implement them; and results will occur.
- 112.\* Set your goals high and work hard to achieve them.
- 117.\* Work is a virtue in and of itself. Hard work never hurt anyone.
- 120.\* The best life is the active, productive life.

## **E. SOCIAL ORIENTATION**

**What is the proper relationship of an individual to other people?**

### ***LINEAL***

- 121. Some people are born to lead others. There are "leaders" and there are "followers" in this world.
- 125.\* In times of difficulty, it's best to go to someone who has the power to change the situation and implore them to help you.
- 129. Each person comes into this world with a different set of talents and abilities. Each person must accept their "gifts" and limitations and fit into their rightful place in society.
- 131.\* The father (and/or mother) should be the "head" of the household; every member of the family should show them the proper respect and never question their authority.
- 134.\* It is more efficient for decisions to be made by top management and passed on down through the "chain of command".
- 138.\* Never question your teachers. They know what is right.
- 140.\* A good wife should be respectful and submissive to her husband. She should follow his judgments, and decisions so that he can lead the family.
- 144.\* Respect and obey your elders, for they are wise and their wisdom, if followed, will serve us well.
- 146. It is important to make decisions which will meet the approval of our elders.
- 149.\* One should follow the requests of one's superiors without questioning their authority.

*COLLATERAL*

- 123.\* Whenever I have a serious problem, I like to get my family or close friends to help me solve it.
- 124.\* The most satisfying and effective form of decision-making is "group consensus".
- 128.\* Management decisions which are made by consensus are always better received.
- 130.\* Thank God we don't have to stand on our own. We have the group to support us and to sustain us.
- 135. Workers will achieve higher levels of productivity if they are part of the decision-making process.
- 137. A person's life will be happier if it is spent in close proximity to one's parents and relatives.
- 139. A married couple will be happiest if they discuss things and jointly decide on a mode of action (which may include compromises but) which will be to their mutual benefit.
- 142. What is not good for the swarm is not good for the bee.
- 145.\* It is better for older children to live with their parents until they marry so they will always be part of the family.
- 147.\* Two heads are better than one.

*INDIVIDUAL*

- 122.\* Ultimately, it is up to each individual to decide what is best for themselves.
- 126. Any society which does not allow individuals to voice their dissent is not a free society.
- 127. The creative tension which competition provides is healthy for an organization or for a society. Competition brings out the best in each individual.

- 132. People are free to act as they see fit, and if their action doesn't have a negative impact on others, they don't even need to let anyone else know what they decided to do.
- 133. Civil disobedience is justifiable when the government's actions conflict with one's own principles or one's own conscience.
- 136. Each person, one vote. Your vote counts as much as anyone else's.
- 141. All people are created equal.
- 143.\* People should be allowed to choose their own **lifestyle and develop** their own unique identity.
- 148.\* Every person should be encouraged to develop themselves to the fullest extent, in whatever way they see fit.
- 150.\* Dare to be different, and always be yourself.

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\* indicates item was included in final scale

**Random Response Items:**

Hough (1990)

1. If you wanted to fly an airplane, you would probably join:

- A) The railroad
- B) The airlines
- C) A trucking company

2. Tomato plants are generally smaller than trees:

- A) True
- B) Not sure
- C) False

3. If you were to test an experimental airplane, you would want to take along:

- A) A map
- B) A parachute
- C) A flashlight

4. Groups of cub scouts are called:

- A) Tribes
- B) Troops
- C) Classes

5. The branch of the Federal government that deals most with problems of employment is the:

- A) FBI
- B) Department of Labor
- C) Department of State

6. Have you ever gone to a doctor?

- A) Yes
- B) Not sure
- C) No

7. Have you ever bought food in a restaurant or fast food place?

- A) Yes
- B) Not sure
- C) No

**Social Desirability Items:****Balanced Inventory of Desirable Responding (BIDR)****Paulhus (1984,1988)****Instructions:** Indicate your agreement to each statement using the following scale:

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

1. My first impressions of people usually turn out to be right.
2. It would be hard for me to break any of my bad habits.
3. I don't care to know what other people really think of me.
4. I have always been honest with myself.
5. I always know why I like things.
6. When my emotions are aroused, it biases my thinking.
7. Once I've made up my mind, other people can seldom change my opinion.
8. I am not a safe driver when I exceed the speed limit.
9. I am fully in control of my own fate.
10. It's hard for me to shut off a disturbing thought.
11. I never regret my decisions.
12. I sometimes lose out on things because I can't make up my mind soon enough.
13. The reason I vote is because my vote can make a difference.
14. My parents were not always fair when they punished me.
15. I am a completely rational person.
16. I rarely appreciate criticism.
17. I am very confident of my judgments.
18. I have sometimes doubted my ability as a lover.
19. It's all right with me if some people happen to dislike me.
20. I don't always know the reasons why I do the things I do.
21. I sometimes tell lies if I have to.
22. I never cover up my mistakes.
23. There have been occasions when I have taken advantage of someone.
24. I never swear.
25. I sometimes try to get even rather than forgive and forget.
26. I always obey laws, even if I'm unlikely to get caught.
27. I have said something bad about a friend behind his or her back.
28. When I hear people talking privately, I avoid listening.
29. I have received too much change from a salesperson without telling him or her.
30. I always declare everything at customs.
31. When I was young I sometimes stole things.
32. I never have dropped litter on the street.
33. I sometimes drive faster than the speed limit.
34. I never read sexy books or magazines.

- 35. I have done things that I don't tell other people about.
- 36. I never take things that don't belong to me.
- 37. I have taken sick-leave from work or school even though I wasn't really sick.
- 38. I have never damaged a library book or store merchandise without reporting it.
- 39. I have some pretty awful habits.
- 40. I don't gossip about other people's business.

**Demographic Information Sheet**

What is your age? \_\_\_\_\_

**For each of the following, please circle your response.**

What is your sex?

- A) Female
- B) Male

What is your race/ethnic group?

- A) American Indian or Alaskan Native
- B) Asian or Pacific Islander
- C) Hispanic
- D) Black (not of Hispanic origin)
- E) White (not of Hispanic origin)

The place in which you spent the most time during your early life was a:

- A) town of less than 2,000 people
- B) town of between 2,000 and 10,000 people
- C) city of 10,000 to 100,000 people
- D) city larger than 100,000

How much formal education did your father receive?

- A) Grade school or less
- B) Some high school
- C) High school graduate
- D) Some college
- E) Four-year college graduate
- F) Advanced degree: M.S., M.B.A., Ph.D., etc.



How much formal education did your mother receive?

- A) Grade school or less
- B) Some high school
- C) High school graduate
- D) Some college
- E) Four-year college graduate
- F) Advanced degree: M.S., M.B.A., Ph.D., etc.

What was your family's approximate annual household income while you were growing up?

- A) less than \$20,000
- B) \$20,000 - \$34,999
- C) \$35,000 - \$44,999
- D) \$45,000 - \$59,999
- E) \$60,000 - \$80,000
- F) Greater than \$80,000

What was the country in which each of the following was born?

If you do not know the birthplace of one of these individual's, please respond "don't know".

- a) You? \_\_\_\_\_
- b) your mother? \_\_\_\_\_
- c) your father? \_\_\_\_\_
- d) your maternal grandfather? \_\_\_\_\_
- e) your maternal grandmother? \_\_\_\_\_
- f) your paternal grandfather? \_\_\_\_\_
- g) your paternal grandmother? \_\_\_\_\_

If born in the United States, what was the state in which each of the following was born?

If you do not know the birthplace of one of these individual's, please respond "don't know".

- a) You? \_\_\_\_\_
- b) your mother? \_\_\_\_\_
- c) your father? \_\_\_\_\_
- d) your maternal grandfather? \_\_\_\_\_
- e) your maternal grandmother? \_\_\_\_\_
- f) your paternal grandfather? \_\_\_\_\_
- g) your paternal grandmother? \_\_\_\_\_

How long have you lived in the Midwest? \_\_\_\_\_ years

## **Subjective Employment Test Items & Their Hypothesized Relationship to Value Orientation Alternatives**

### **Scale Codes:**

**CLHI:** Catalog of Life History Items (Owens, Glennon & Albright, 1966)

**ABLE:** Assessment of Background and Life Experiences (U.S. Army Research Institute)

**NEO-PI:** NEO-PI-R

**BM-C:** Conscientiousness Scale (Barrick & Mount)

**TDI:** Transport Driver Inventory

**Sales:** Sales Aptitude Test

**MBI:** Rationally-keyed Biographical Data Items for Constructs Related to Sales Performance (Mumford, 1993)

**DRA:** Biodata items from Domm-Richardson Associates

**RGG:** Russell, Green, & Griggs

**MMPI:** Minnesota Multiphasic Personality Inventory

**FBI:** Biodata items of the Federal Bureau of Investigation

**Human Nature Orientation Items:**

(-) indicates Good

(#) indicates Mixed

(+) indicates Evil

(CLHI)

What has been your experience with people?

1. There is a lot of good in all people. (-)
2. There is some good in most people. (#)
3. People are about as good as they have to be. (+)
4. A surprising number of people are mean and dishonest. (+)

(CLHI)

Which of the following statements best expresses your feelings concerning the proctoring of college examinations?

1. Examinations should be closely proctored because few students are completely honest in all situations. (+)
2. Examinations should be closely proctored although most students are honest, a few need to be watched carefully. (#)
3. Close proctoring is not necessary, since cheating is not really much of a problem. (-)
4. The best way to handle this problem is by use of the honor system, in which students themselves are responsibly for each other. (-)

(TDI)

Which one of the following techniques of disciplining a child would you use most frequently?

1. Denying the child some material pleasure
2. Encouraging the child by pointing out good behavior (-)
3. Leaving decisions up to the child after discussion
4. Trying to reason with the child
5. Punishing or spanking the child, letting him know why he is being punished (+)

(FBI)

I tend to be cynical and skeptical of others' intentions.

1. Strongly agree (+)
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree (-)

**(FBI)**

**I believe that most people will take advantage of you if you let them.**

1. Strongly agree (+)
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree (-)

**Person-Nature Orientation Items:**

**(-) indicates Subjugated to Nature**

**(#) indicates Harmony with Nature**

**(+) indicates Mastery over Nature**

**(ABLE)**

**Success is usually a result of:**

1. More hard work than luck (+)
2. Some hard work and some luck
3. More luck than hard work (-)

**(ABLE)**

**How often do you feel that you have very little control over the things that happen to you?**

1. Often (-)
2. Sometimes
3. Rarely or never (+)

**(ABLE)**

**Getting a raise or a promotion is usually a matter of luck. Do you agree?**

1. Yes (-)
2. Not sure
3. No (+)

**(ABLE)**

**What happens to you in the long run is mostly under your control. Do you agree?**

1. Yes (+)
2. Not sure
3. No (-)

**(ABLE)**

**Do you think that hard work makes the difference between who succeeds and who doesn't?**

1. Most of the difference (+)
2. Some of the difference
3. Little of the differences (-)

**(TDI)****How much do you tend to react to an unpleasant situation?**

1. Generally try to react immediately and figure out the best solution.
2. Most of the time I put off a decision for a little while so I can think it over.
3. Often want to "sleep on it" or put off a decision for quite a while.
4. I don't worry about it, things will take care of themselves. (#)

**(TDI)****How do you feel about your share of luck in life?**

1. Have had nothing but bad breaks. (-)
2. Have had about an even share of luck.
3. Have had more than your share of bad breaks.
4. Have had more good breaks than bad ones.
5. Luck has been your way practically all the time.

**(FBI)****When there are unexpected changes at work or school,**

1. You usually feel upset, and your mood may be affected.
2. You just try to "deal with it".
3. You feel challenged by the new situation. (+)

**(FBI)****If you have a very important meeting in a city one hour away, but the roads are treacherous due to an ice storm, which of the following are you most likely to do?**

1. Call to try to reschedule the appointment.
2. Leave early and drive with great caution to the appointment. (+)
3. Attempt to drive to the appointment, but turn around if the roads are too icy.
4. Attempt to get a friend to drive you to the appointment

**Time Orientation Items:**

(-) indicates Past

(#) indicates Present

(+) indicates Future

(CLHI)

Concerning your present activities, do you

1. Make rather precise and detailed plans (+)
2. Make broad and general plans, but not detailed ones
3. Make few plans, let "nature take its course"

(CLHI)

If you visit a museum, how do you feel?

1. Bored
2. Thoroughly interested (-)
3. Neither bored nor interested
4. Don't go to museums
5. It's a good place to take children

(ABLE)

How often do you lose sleep over your worries?

1. Often (+)
2. Sometimes
3. Rarely or never

(ABLE)

You believe in:

1. Living for the moment (#)
2. Not sure
3. Working for the future (+)

(MBI)

Relative to your coworkers how much time have you spent preparing for meetings?

1. Much more time than most people (+)
2. More time than most people
3. Less time than most people
4. Much less time than most people



**(MBI)****How often have you been late for meetings?**

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never (+)

**(MBI)****How likely have you been to recognize that you do not have a piece of equipment or part before you actually need to use it?**

1. Much more likely than most people (+)
2. Somewhat more likely than most people
3. About as likely as others
4. Somewhat less likely than most people
5. A good bit less likely than most people

**(MBI)****To what extent did you limit certain career choices because you thought you wouldn't do very well?**

1. Great extent (+)
2. Large extent
3. Moderate extent
4. Slight extent
5. Not at all

**(FBI)****When working on an assignment with a deadline, what do you normally do?**

1. Work only on the assignment with a deadline to get it done before all other assignments.
2. Wait until the deadline approaches and then work feverishly on the assignment to get it done. (#)
3. Ask for an extension of the deadline in order to accomplish the assignment.
4. Work on all assignments, keeping in mind the deadline.

**(FBI)****When reviewing your schedule,**

1. You like to have things written down on your calendar weeks in advance.  
(+)
2. You like to have your schedule written out days in advance.
3. You think ahead, but keep most of the information in your head.
4. You rely on others to remind you of events or responsibilities.



(FBI)

When buying gifts for friends or relatives, how early do you typically make the purchase prior to giving the gift?

1. Purchase the gift following the occasion for which it was intended.
2. One day or less
3. Two to 6 days
4. One week or more (+)

(FBI)

Do you generally employ the use of a date book, daily planner, or other scheduling aid?

1. Yes (+)
2. No

(FBI)

At what time do you generally arrive at scheduled appointments?

1. A few minutes earlier than the schedule time. (+)
2. At the scheduled time.
3. A few minutes later than the scheduled time.

(FBI)

When you take a vacation, which do you prefer?

1. Like to plan it down to the last detail. (+)
2. Like to make general plans, but let the details take care of themselves.
3. Like to take spontaneous trips and recreation.

(FBI)

To what extent do you plan your day?

1. I do a lot of planning before starting each day. (+)
2. I plan my day in a general way, but don't spend much time at it.
3. I don't do a lot of planning.

**Activity Orientation Items:**

(-) indicates Being

#) indicates Being-in-Becoming

(+) indicates Doing

(CLHI)

What do you feel has been your major accomplishment, outside of work?

1. Family activities
2. Community activities
3. Development of yourself (#)
4. Development of your social activities

(CLHI)

How many hours a day do you spend in constructive work?

1. About 4
2. 5 or 6
3. 7 to 9
4. over 9 (+)

(CLHI)

What do you think is the most important thing a person should get out of college?

1. Training for a profession
2. General cultural knowledge
3. Personal maturity (#)
4. Social polish

(CLHI)

In the course of a week, which of the following gives you the greatest satisfaction?

1. Being told you have done a good job. (+)
2. Helping people solve their problems.
3. Being with your family and close friends.
4. Having free time to use as you please.
5. None of these

(CLHI)

How greatly disturbed are you if something is left unfinished?

1. Slightly
2. Moderately
3. Considerably
4. Highly (+)

**(CLHI)****Fantasies are**

1.      **Something to avoid**
2.      **Something to enjoy (#)**
3.      **Something to build constructively upon (+)**

**(CLHI)****Which of the following is most important to you?**

1.      **Professional status or authority (+)**
2.      **Money**
3.      **Family and friends**
4.      **Religion**
5.      **Recreation (-)**

**(CLHI)****How much do you enjoy work, as opposed to spare time activities?**

1.      **Enjoy work much more (+)**
2.      **Enjoy work more**
3.      **About the same**
4.      **Enjoy spare time activities more**
5.      **Enjoy spare time activities much more (-)**

**(ABLE)****How often do you skip class for something more fun?**

1.      **Many times (-)**
2.      **A few times**
3.      **Rarely or never**

**(ABLE)****How do you feel about hard work?**

1.      **It makes you feel good (+)**
2.      **You don't mind it now and then**
3.      **You don't really like it**

**(ABLE)****Rewards will come to people who work for them. Do you agree?**

1.      **Yes (+)**
2.      **Not sure**
3.      **No**



(ABLE)

Planning things a lot ahead of time makes life boring. Do you agree?

1. Yes (-)
2. Not sure
3. No

(TDI)

When you go on a vacation trip in your car and are going to a particular place, do you:

1. Dislike to make unnecessary stops until you get where you are going (+)
2. Plan to stop only at planned points along the way
3. Plan the trip so you can detour or stop whenever something interests you
4. Sometimes get sidetracked and don't get to your original destination

(TDI)

Which one of these characteristics bothers you most in people you meet?

1. Bragging
2. Shyness
3. Lack of initiative (+)
4. Trying to get something for nothing
5. Being very competitive

(TDI)

When you were a child and broke something trying to see "what makes it tick", what did your parents do?

1. Became angry and punished you
2. Tried to explain to you that it was wrong, becoming angry only in certain instances
3. Usually said little or nothing about it
4. Tried to help you find the answers you were looking for (#)

(TDI)

How upset do you get if you have to leave a chore unfinished?

1. It bothers me a lot (+)
2. It bothers me
3. I don't get too concerned about it
4. It really doesn't bother me

(TDI)

What would be the most important factor in your recommending an employee for an increase or promotion?

1. Ability to get the work out (+)
2. Quality of work or technical competence
3. Ability to get along with people
4. Ability to come up with new ideas

**(MBI)****How often have you held off talking about a problem because the timing wasn't right?**

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never (-)

**(MBI)****How often have you neglected other areas of your life in order to accomplish more at work?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)****How often have you been upset at the end of a workday because you felt you hadn't accomplished enough?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)****To what extent has your satisfaction with life depended upon what's been going on at work or school?**

1. Great extent (+)
2. Large extent
3. Moderate extent
4. Slight extent
5. Not at all

**(MBI)****How often do you end up creating work for yourself to keep from getting bored?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)**

**How often have you felt guilty when you took time off just to relax?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)**

**Relative to others, how often have you found yourself comparing your achievements with those of your friends?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)**

**How often have you read books just to learn something?**

1. Very often (#)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)**

**How often have you chosen classes, project, or assignments simply to learn something new?**

1. Very often (#)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)**

**How often have you attended cultural events when you were uncertain of whether or not you would enjoy them?**

1. Very often (#)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)****How comfortable have you been discussing your strengths and weaknesses with others?**

1. Very comfortable (#)
2. Comfortable
3. Neither comfortable nor uncomfortable
4. Uncomfortable
5. Very uncomfortable

**(DRA)****How often did you make a "to do" list in school to make sure you accomplished everything?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(RGG)****How often have you done something that made you really stop and think about what was important in your life?**

1. Very often (#)
2. Often
3. Sometimes
4. Seldom
5. Never

**(FBI)****I don't always know the reasons why I do the things I do.**

1. Very true (-)
2. Mostly true
3. Somewhat true
4. Mostly untrue
5. Very untrue (+)

**(FBI)****How would your friends describe you when faced with decisions?**

1. As one who acts impulsively. (-)
2. As one who considers more than one alternative before acting.
3. As one who is very cautious and takes a long time to arrive at a decision.

**(FBI)**

**On weekends, you typically**

1. Plan your activities in general terms
  2. Plan your activities specifically and draw up a schedule
  3. Plan some activities, but leave most of the weekend for "spontaneous" activity. (-)
  4. Plan very few or no activities, simply do what you feel like at the time.
- (-)

**(FBI)**

**Do you generally do your best**

1. At whatever job you are doing (+)
2. Only in what you are interested
3. Only when it is demanded of you

**(FBI)**

**When you are reading and come across a word you do not know, what do you usually do?**

1. Keep right on reading.
2. Immediately look it up in the dictionary. (#)
3. Sometimes look it up depending on the context in which it is used.
4. Make a mental note to look the word up at a later date.

**(FBI)**

**When you have been away on vacation and it's about time to return, do you:**

1. Stay as long as you can and sometimes don't start back as soon as you should.
2. Feel ready to return although you don't leave until it is necessary.
3. Become anxious to get home and leave when you had originally planned. (+)
4. Often start home earlier than you actually have to.

**(FBI)**

**If you were given more assignments than you could complete in a given period of time, what would you do?**

1. Complete as many assignments as possible in the given time. (+)
2. Prioritize the assignments according to importance, and then complete as much as possible in the given time.
3. Ask a supervisor to decrease the workload to a manageable level.
4. Ask a co-worker to help you complete the assignments.

**(FBI)**

**In college, which type of class did you enjoy most?**

1. Lecture
2. Laboratory
3. Discussion (#)



(FBI)

How do you arrange your study time in college?

1. According to a regular, set schedule.
2. A fairly regular arrangement, but not according to any schedule.
3. Sporadic, whenever convenient and/or necessary. (-)

(FBI)

When working on simple tasks,

1. You like to think about solutions to other work-related problems.
2. You concentrate on the task at hand.
3. You like to daydream or think of things outside of work. (-)

(FBI)

When you take a vacation, which do you prefer?

1. Like to plan it down to the last detail.
2. Like to make general plans, but let the details take care of themselves.
3. Like to take spontaneous trips and recreation. (-)

(FBI)

To what extent do you plan your day?

1. I do a lot of planning before starting each day.
2. I plan my day in a general way, but don't spend much time at it.
3. I don't do a lot of planning. (-)

(FBI)

I don't like to waste my time daydreaming

1. Strongly agree (+)
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree

(FBI)

I waste a lot of time before settling down to work.

1. Strongly agree (-)
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree

**(FBI)**

**I work hard to accomplish my goals.**

1. Strongly agree (+)
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree

**(FBI)**

**I have little interest in speculating on the nature of the universe or the human condition.**

1. Strongly agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree (#)

**(FBI)**

**I am a productive person who always gets the job done.**

1. Strongly agree (+)
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree

**Relations Orientation Items:**

(-) indicates Lineal

(#) indicates Communal

(+) indicates Individual

(CLHI)

What do you feel has been your major accomplishment, outside of work?

1. Family activities
2. Community activities (#)
3. Development of yourself
4. Development of your social activities

(CLHI)

Which of the following is most important to you?

1. Professional status or authority
2. Money
3. Family and friends (#)
4. Religion
5. Recreation

(ABLE)

How often were you disrespectful to your high school teachers?

1. Often
2. Sometimes
3. Rarely or never (-)

(ABLE)

Do you respect people in positions of authority?

1. Yes, almost all of them (-)
2. Yes, some of them
3. Yes, but only a few of them

(ABLE)

How often have you gone against your parents'/guardians wishes?

1. Quite often (+)
2. Sometimes
3. Rarely or never (-)

(ABLE)

Do you ignore a rule if it gets in the way of what you want to do?

1. Yes, usually (+)
2. Yes, sometimes
3. No, never

**(ABLE)****People should have greater respect for authority. Do you agree?**

1. Yes (-)
2. Not sure
3. No

**(NEO-PI)****I usually prefer to do things alone.**

1. Strongly Agree (+)
2. Agree
3. Neither Agree nor Disagree
4. Disagree
5. Strongly Disagree

**(NEO-PI)****I prefer jobs that let me work alone without being bothered by other people.**

1. Strongly Agree (+)
2. Agree
3. Neither Agree nor Disagree
4. Disagree
5. Strongly Disagree

**(TDI)****Who do you feel was most important in teaching you about life and how to live?**

1. My parent(s)
2. My religious teachers
3. My close friends
4. My own observations and thinking (+)

**(TDI)****As a young person when you did something wrong, whose praise did you value most?**

1. A friend
2. A teacher
3. Your parents
4. Someone else
5. Did things well for your own satisfaction (+)

**(TDI)****What would be the most important factor in your recommending an employee for an increase or promotion?**

1. Ability to get the work out
2. Quality of work or technical competence
3. Ability to get along with people (#)
4. Ability to come up with new ideas

**(Sales)**

**Would you rather play in a dance-band than be a soloist for the opera?**

1. Yes (#)
2. No (+)

**(MBI)**

**Relative to others, how much time do you devote to social service or charity organizations?**

1. Much more time than others (#)
2. More time than others
3. About as much time as others
4. Less time than others
5. Much less time than others

**(MBI)**

**How often have you put in a lot of extra effort to buy some independence?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(MBI)**

**In previous jobs, to what extent have you tried to blend in and become part of the team?**

1. Great extent (#)
2. Large extent
3. Moderate extent
4. Slight extent
5. Not at all (+)

**(MBI)**

**How often have you gone along with a decision you did not agree with in order to maintain group harmony?**

1. Very often (#)
2. Often
3. Sometimes
4. Seldom
5. Never (+)

**(MBI)**

**How important has it been for you to be in community/volunteer work?**

1. Extremely important (#)
2. Very important
3. Somewhat important
4. Slightly important
5. Not very important

**(MBI)**

**How often have you found yourself thinking about how the consequences of your actions will affect others?**

1. Very often (#)
2. Often
3. Sometimes
4. Seldom
5. Never

**(RGG)**

**How often have you seen people put friendships and personal goals aside to try and achieve a greater good for the larger group?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(RGG)**

**How often have you hurt a friend to benefit yourself?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(RGG)**

**How often have you been accused by others of doing something solely because it was in your best interest?**

1. Very often (+)
2. Often
3. Sometimes
4. Seldom
5. Never

**(FBI)****How much time do you volunteer to help service groups in your community?**

1. Very few hours monthly
2. Several hours monthly
3. Several hours weekly (#)

**(FBI)****What do you consider to be the major motivating force in your life?**

1. Prestige
2. Material gains
3. To invent something new
4. To gain a position of security
5. To help others (#)

**(FBI)****How often have you refrained from doing something because you thought that the action might reflect negatively on other members of an organization of which you are a member (e.g., work, school, religious group, etc.)?**

1. Often (#)
2. Sometimes
3. Rarely
4. Never

**(FBI)****If you were given more assignments than you could complete in a given period of time, what would you do?**

1. Complete as many assignments as possible in the given time.
2. Prioritize the assignments according to importance, and then complete as much as possible in the given time.
3. Ask a supervisor to decrease the workload to a manageable level.
4. Ask a co-worker to help you complete the assignments. (#)

**(FBI)****To how many civic organizations (i.e., Circle K, CADA, Listening Ear, etc) do you belong?**

1. 0
2. 1
3. 2 or 3
4. 4 to 6 (#)
5. 7 or more (#)

**(FBI)**

How would you react if your parents or a close relative asked you to come home for an important family event when had planned a weekend trip with friends?

1. Tell your parents you can't go because of the previous engagement. (+)
2. Tell your friends you can't join them and go home. (-)
3. Try to reschedule the event with your friends.

**(FBI)**

Would your choice of an ideal occupation be one which

1. Allowed a great deal of interaction with other people. (#)
2. Would require working with a small group of people.
3. Would allow you to work closely with one other person.
4. Would allow you to work by yourself. (+)

**(FBI)**

When someone around you is disturbed about a personal problem, which one of the following do you usually do?

1. Leave the person alone, avoid the subject.
2. Offer advice and suggest a possible solution.
3. Sympathize with the person.
4. Encourage the person to talk it out with you. (#)

**(FBI)**

Which of the following situations do you most prefer?

1. Being alone (+)
2. Being alone with pets
3. Being with one other person
4. Being in large groups of people (#)

**(FBI)**

Since high school have you ever received a commendation for civic involvement (i.e., good citizenship awards, community service awards, etc.)?

1. Yes (#)
2. No

**(FBI)**

The work accomplishments with which you have been most satisfied have been

1. Largely due to your own thought and effort. (+)
2. The result of team effort with your colleagues. (#)

**(FBI)**

**If you attended a meeting, dinner or lecture (outside of school or work) where the speaker said something with which your organization would disagree, but with which you personally agree,**

- 1. You would express your agreement. What you do on your own time is your business. (+)**
- 2. You would express your agreement, but hope no one from your organization was there to witness it.**
- 3. You would not react. You feel that you represent your organization at all times. (#)**

**(FBI)**

**If you had to work on a very important project at work,**

- 1. You would concentrate all of your energy on it, even if that meant missing a deadline on a less important project.**
  - 2. You would minimally attend to your other work responsibilities realizing that you could not give all your time to the more important project.**
  - 3. You would attempt to divide up your time equally.**
  - 4. You would ask your supervisor/boss to find someone else to help you.**
- (#)**

**(FBI)**

**I would rather cooperate with others than compete with them.**

- 1. Strongly agree (#)**
- 2. Agree**
- 3. Neither agree nor disagree**
- 4. Disagree**
- 5. Strongly disagree (+)**

**(FBI)**

**I believe we should look to our religious authorities for decisions on moral issues.**

- 1. Strongly agree (-)**
- 2. Agree**
- 3. Neither agree nor disagree**
- 4. Disagree**
- 5. Strongly disagree**

## **APPENDIX B**

## **Appendix B**

2. What has been your experience with people? (**Human Nature: Good**)
  1. There is a lot of good in all people.
  2. There is some good in most people.
  3. People are about as good as they have to be.
  4. A surprising number of people are mean and dishonest.
  
3. Which of the following statements best expresses your feelings concerning the proctoring of college examinations? (**Human Nature: Evil**)
  1. Examinations should be closely proctored because few students are completely honest in all situations.
  2. Examinations should be closely proctored although most students are honest, a few need to be watched carefully.
  3. Close proctoring is not necessary, since cheating is not really much of a problem.
  4. The best way to handle this problem is by use of the honor system, in which students themselves are responsible for each other.
  
6. On weekends, you typically (**Activity: Doing**)
  1. Plan your activities in general terms
  2. Plan your activities specifically and draw up a schedule
  3. Plan some activities, but leave most of the weekend for "spontaneous" activity.
  4. Plan very few or no activities, simply do what you feel like at the time
  
11. I tend to be cynical and skeptical of others' intentions. (**Human Nature: Evil**)
  1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
  
15. When reviewing your schedule, (**Time: Future**)
  1. You like to have things written down on your calendar weeks in advance.
  2. You like to have your schedule written out days in advance.
  3. You think ahead, but keep most of the information in your head.
  4. You rely on others to remind you of events or responsibilities.

21. To what extent do you plan your day? **(Time: Future)**
1. I do a lot of planning before starting each day.
  2. I plan my day in a general way, but don't spend much time at it.
  3. I don't do a lot of planning.
25. If you visit a museum, how do you feel? **(Time: Past)**
1. Bored
  2. Thoroughly interested
  3. Neither bored nor interested
  4. Don't go to museums
  5. It's a good place to take children
26. How many hours a day do you spend in constructive work? **(Activity: Doing)**
1. About 4
  2. 5 or 6
  3. 7 to 9
  4. over 9
28. People should have greater respect for authority. Do you agree? **(Relations: Lineal)**
1. Yes
  2. Not sure
  3. No
33. How do you feel about hard work? **(Activity: Doing)**
1. It makes you feel good
  2. You don't mind it now and then
  3. You don't really like it
47. I believe we should look to our religious authorities for decisions on moral issues. **(Relations: Lineal)**
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
59. Which one of these characteristics bothers you most in people you meet? **(Activity: Doing)**
1. Bragging
  2. Shyness
  3. Lack of initiative
  4. Trying to get something for nothing
  5. Being very competitive

63. How greatly disturbed are you if something is left unfinished? (**Activity: Doing**)
1. Slightly
  2. Moderately
  3. Considerably
  4. Highly
64. How often have you chosen classes, project, or assignments simply to learn something new? (**Activity: Being-in-Becoming**)
1. Very often
  2. Often
  3. Sometimes
  4. Seldom
  5. Never
68. I work hard to accomplish my goals. (**Activity: Doing**)
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
71. How likely have you been to recognize that you do not have a piece of equipment or part before you actually need to use it? (**Time: Future**)
1. Much more likely than most people
  2. Somewhat more likely than most people
  3. About as likely as others
  4. Somewhat less likely than most people
  5. A good bit less likely than most people
73. I am a productive person who always gets the job done. (**Activity: Doing**)
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
75. Do you respect people in positions of authority? (**Relations: Lineal**)
1. Yes, almost all of them
  2. Yes, some of them
  3. Yes, but only a few of them

77. I believe that most people will take advantage of you if you let them. (**Human Nature: Evil**)
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
87. You believe in: (**Time: Present**)
1. Living for the moment
  2. Not sure
  3. Working for the future
96. Do you generally employ the use of a date book, daily planner, or other scheduling aid? (**Time: Future**)
1. Yes
  2. No
110. Which of the following situations do you most prefer? (**Relations: Collateral**)
1. Being alone
  2. Being alone with pets
  3. Being with one other person
  4. Being in large groups of people

## **APPENDIX C**

## **Appendix C**

2. What has been your experience with people? **(Human Nature)**
  1. There is a lot of good in all people.
  2. There is some good in most people.
  3. People are about as good as they have to be.
  4. A surprising number of people are mean and dishonest.
  
3. Which of the following statements best expresses your feelings concerning the proctoring of college examinations? **(Human Nature)**
  1. Examinations should be closely proctored because few students are completely honest in all situations.
  2. Examinations should be closely proctored although most students are honest, a few need to be watched carefully.
  3. Close proctoring is not necessary, since cheating is not really much of a problem.
  4. The best way to handle this problem is by use of the honor system, in which students themselves are responsible for each other.
  
6. On weekends, you typically **(Activity)**
  1. Plan your activities in general terms
  2. Plan your activities specifically and draw up a schedule
  3. Plan some activities, but leave most of the weekend for "spontaneous" activity.
  4. Plan very few or no activities, simply do what you feel like at the time
  
8. Which of the following is most important to you? **(Relations)**
  1. Professional status or authority
  2. Money
  3. Family and friends
  4. Religion
  5. Recreation

10. Which one of the following techniques of disciplining a child would you use most frequently? **(Human Nature)**
1. Denying the child some material pleasure
  2. Encouraging the child by pointing out good behavior
  3. Leaving decisions up to the child after discussion
  4. Trying to reason with the child
  5. Punishing or spanking the child, letting him know why he is being punished
11. I tend to be cynical and skeptical of others' intentions. **(Human Nature)**
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
12. If you have a very important meeting in a city one hour away, but the roads are treacherous due to an ice storm, which of the following are you most likely to do? **(Person-Nature)**
1. Call to try to reschedule the appointment.
  2. Leave early and drive with great caution to the appointment.
  3. Attempt to drive to the appointment, but turn around if the roads are too icy.
  4. Attempt to get a friend to drive you to the appointment
18. When you take a vacation, which do you prefer? **(Time)**
1. Like to plan it down to the last detail.
  2. Like to make general plans, but let the details take care of themselves.
  3. Like to take spontaneous trips and recreation.
20. Would you rather play in a dance-band than be a soloist for the opera? **(Relations)**
1. Yes
  2. No
23. Concerning your present activities, do you **(Time)**
1. Make rather precise and detailed plans
  2. Make broad and general plans, but not detailed ones
  3. Make few plans, let "nature take its course"
33. How do you feel about hard work? **(Activity)**
1. It makes you feel good
  2. You don't mind it now and then
  3. You don't really like it

40. How often have you been upset at the end of a workday because you felt you hadn't accomplished enough? **(Activity)**
1. Very often
  2. Often
  3. Sometimes
  4. Seldom
  5. Never
42. How often do you end up creating work for yourself to keep from getting bored? **(Activity)**
1. Very often
  2. Often
  3. Sometimes
  4. Seldom
  5. Never
44. How often have you felt guilty when you took time off just to relax? **(Activity)**
1. Very often
  2. Often
  3. Sometimes
  4. Seldom
  5. Never
47. I believe we should look to our religious authorities for decisions on moral issues. **(Relations)**
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
53. When you are reading and come across a word you do not know, what do you usually do? **(Activity)**
1. Keep right on reading.
  2. Immediately look it up in the dictionary.
  3. Sometimes look it up depending on the context in which it is used.
  4. Make a mental note to look the word up at a later date.
57. In college, which type of class did you enjoy most? **(Activity)**
1. Lecture
  2. Laboratory
  3. Discussion

58. When you go on a vacation trip in your car and are going to as particular place, do you: **(Activity)**
1. Dislike to make unnecessary stops until you get where you are going
  2. Plan to stop only at planned points along the way
  3. Plan the trip so you can detour or stop whenever something interest you
  4. Sometimes get sidetracked and don't get to your original destination
69. To how many civic organizations (i.e., Circle K, CADA, Listening Ear, etc) do you belong? **(Relations)**
1. 0
  2. 1
  3. 2 or 3
  4. 4 to 6
  5. 7 or more
72. I have little interest in speculating on the nature of the universe or the human condition. **(Activity)**
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
74. How often were you disrespectful to your high school teachers? **(Relations)**
1. Many times
  2. A few times
  3. On rare occasions
  4. Never
77. I believe that most people will take advantage of you if you let them. **(Human Nature)**
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree

83. How often have you put in a lot of extra effort to buy some independence?

**(Relations)**

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never

87. You believe in: **(Time)**

1. Living for the moment
2. Not sure
3. Working for the future

89. How important has it been for you to be in community/volunteer work?

**(Relations)**

1. Extremely important
2. Very important
3. Somewhat important
4. Slightly important
5. Not very important

94. How often have you seen people put friendships and personal goals aside to try and achieve a greater good for the larger group? **(Relations)**

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never

95. How often have you hurt a friend to benefit yourself? **(Relations)**

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never

99. How often have you been accused by others of doing something solely because it was in your best interest? **(Relations)**

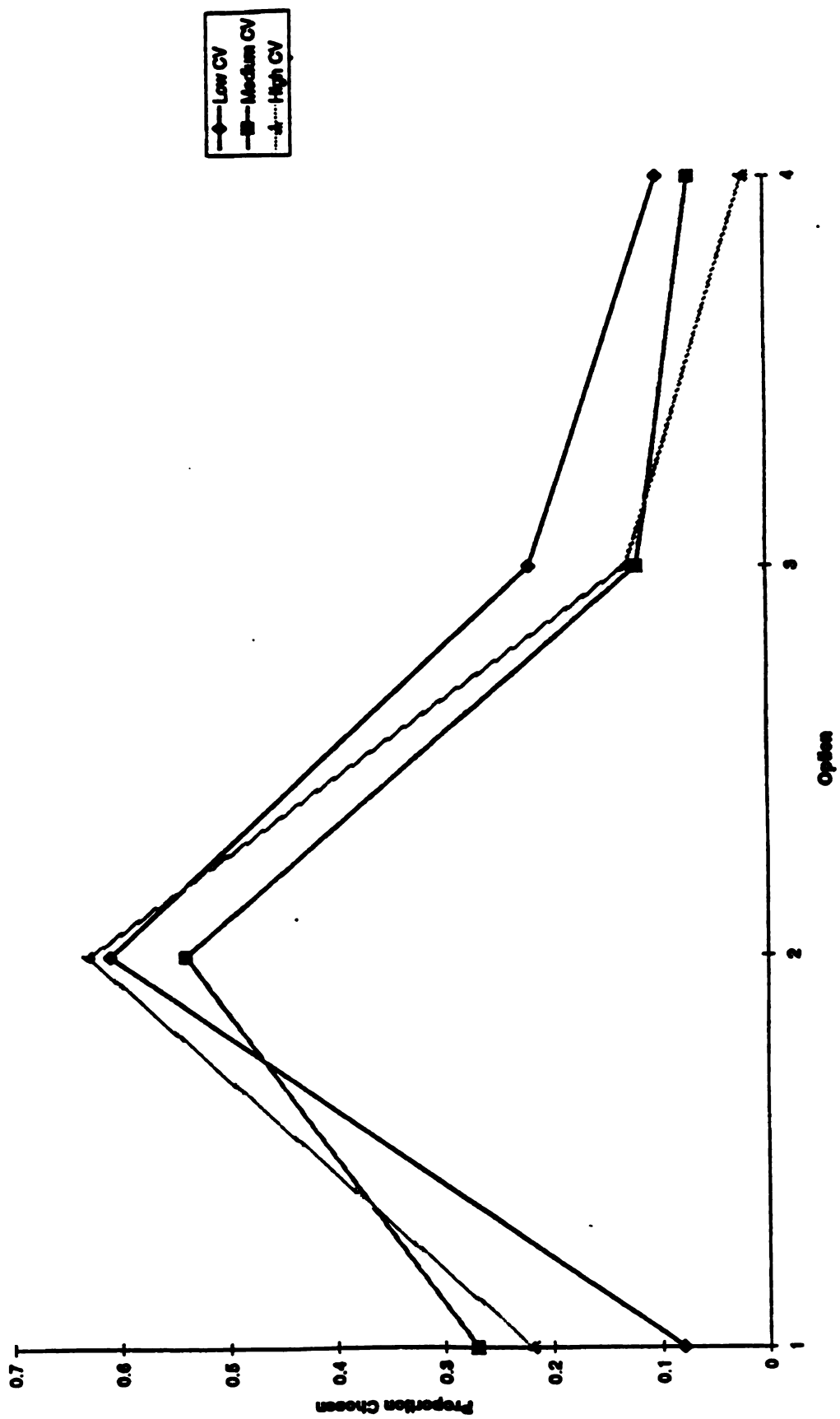
1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never

100. How much time do you volunteer to help service groups in your community?  
**(Relations)**
1. Very few hours monthly
  2. Several hours monthly
  3. Several hours weekly
  4. Very little or not at all
103. When you were a child and broke something trying to see "what makes it tick", what did your parents do? **(Activity)**
1. Became angry and punished you
  2. Tried to explain to you that it was wrong, becoming angry only in certain instances
  3. Usually said little or nothing about it
  4. Tried to help you find the answers you were looking for
104. How upset do you get if you have to leave a chore unfinished? **(Activity)**
1. It bothers me a lot
  2. It bothers me
  3. I don't get too concerned about it
  4. It really doesn't bother me
106. What happens to you in the long run is mostly under your control. Do you agree?  
**(Person-Nature)**
1. Yes
  2. Not sure
  3. No
110. Which of the following situations do you most prefer? **(Relations)**
1. Being alone
  2. Being alone with pets
  3. Being with one other person
  4. Being in large groups of people
112. Since high school have you ever received a commendation for civic involvement (i.e., good citizenship awards, community service awards, etc.)? **(Relations)**
1. Yes
  2. No

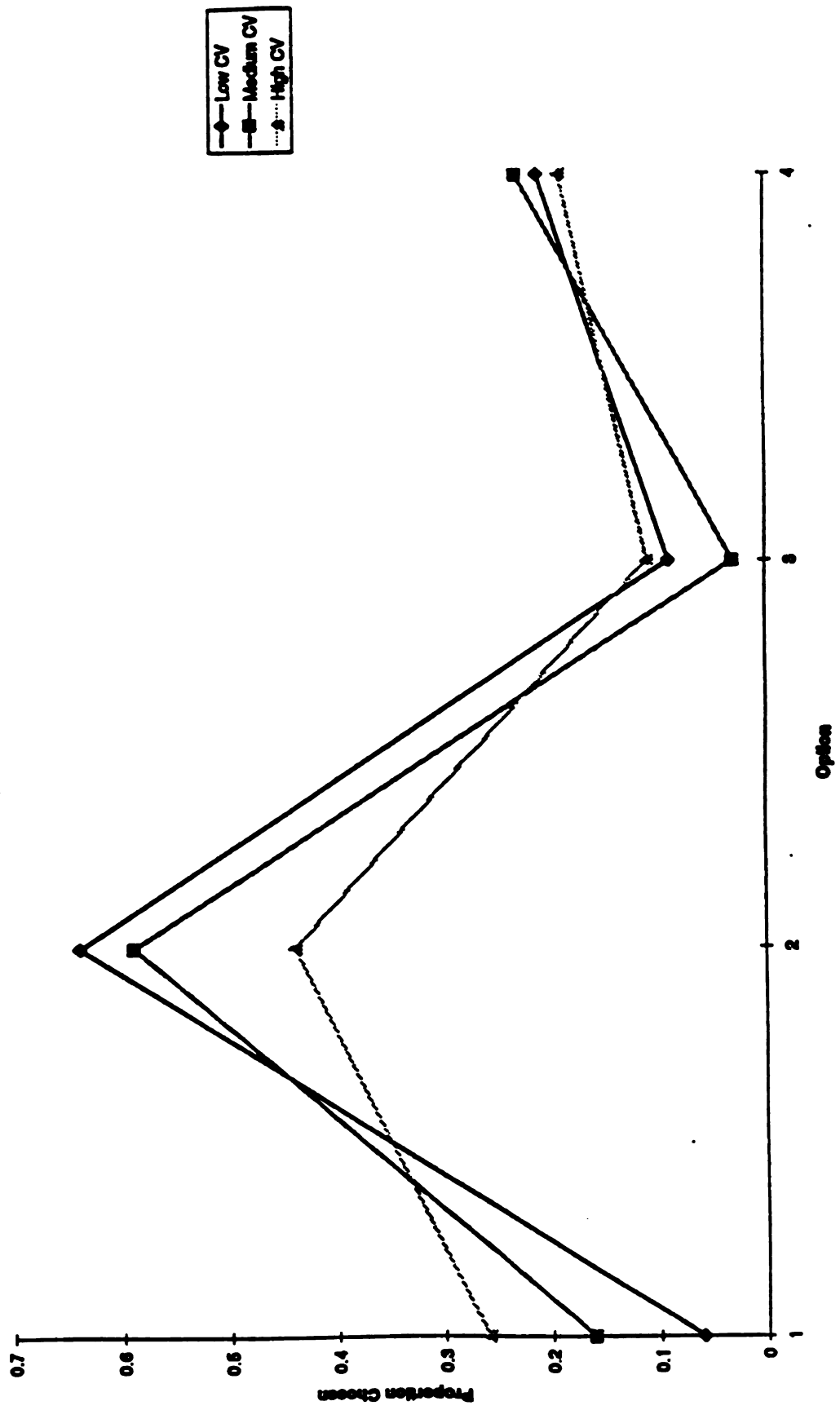
114. If you had to work on a very important project at work, **(Relations)**
1. You would concentrate all of your energy on it, even if that meant missing a deadline on a less important project.
  2. You would minimally attend to your other work responsibilities realizing that you could not give all your time to the more important project.
  3. You would attempt to divide up your time equally.
  4. You would ask your supervisor/boss to find someone else to help you.

## **APPENDIX D**

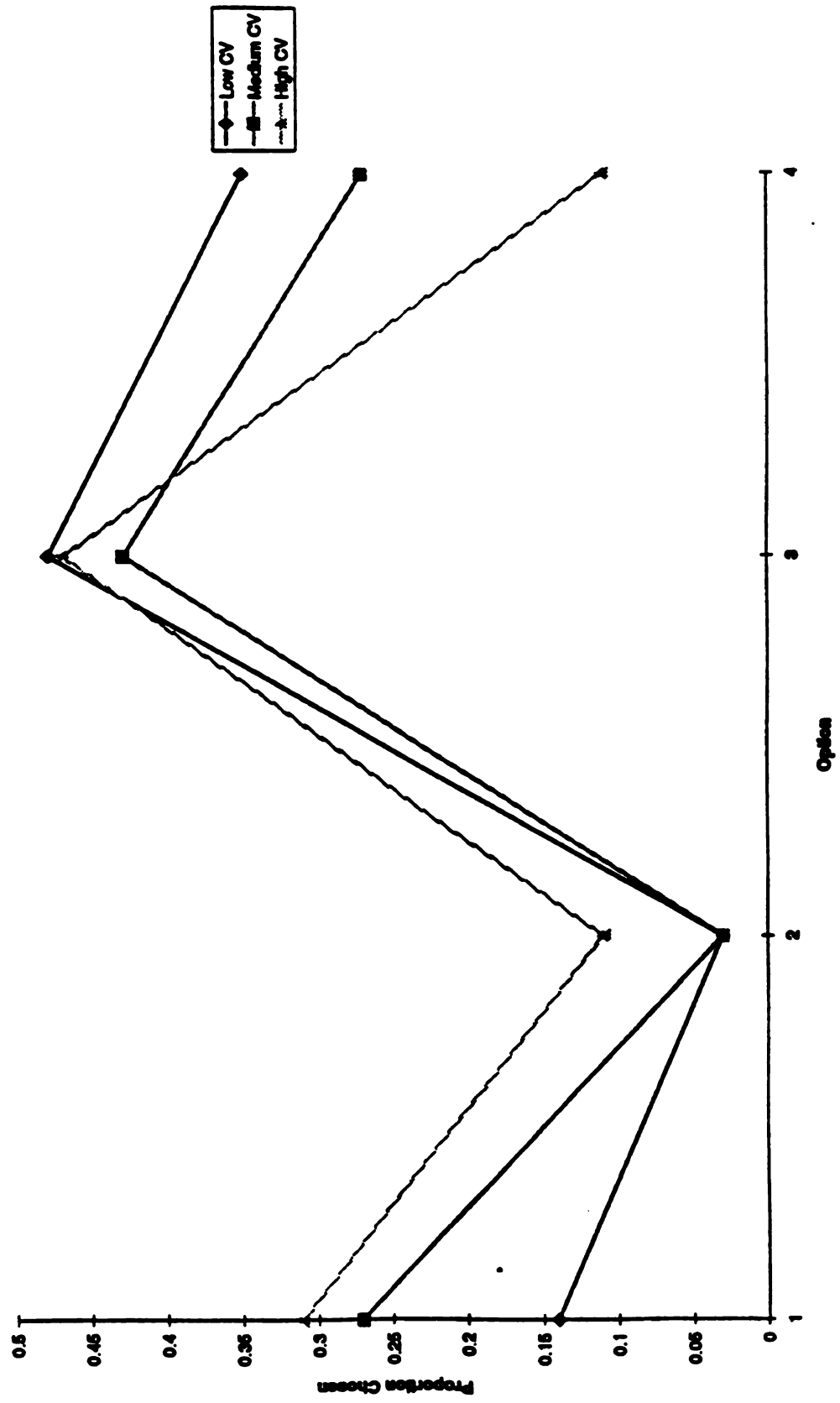
Cultural Value\*Option Choice  
Interaction Graphs:  
Blo2



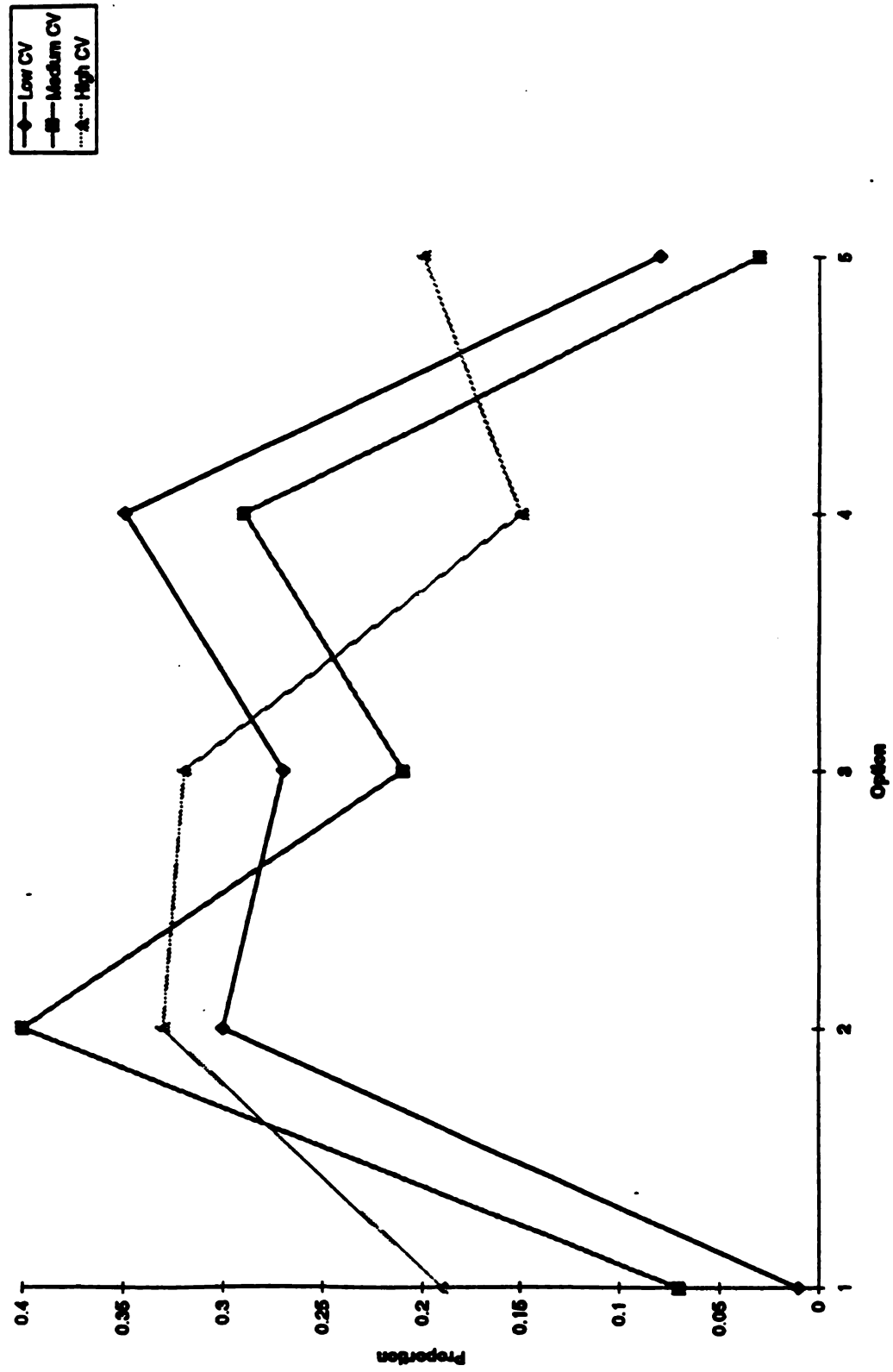
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Interaction Graphs:  
Blo3



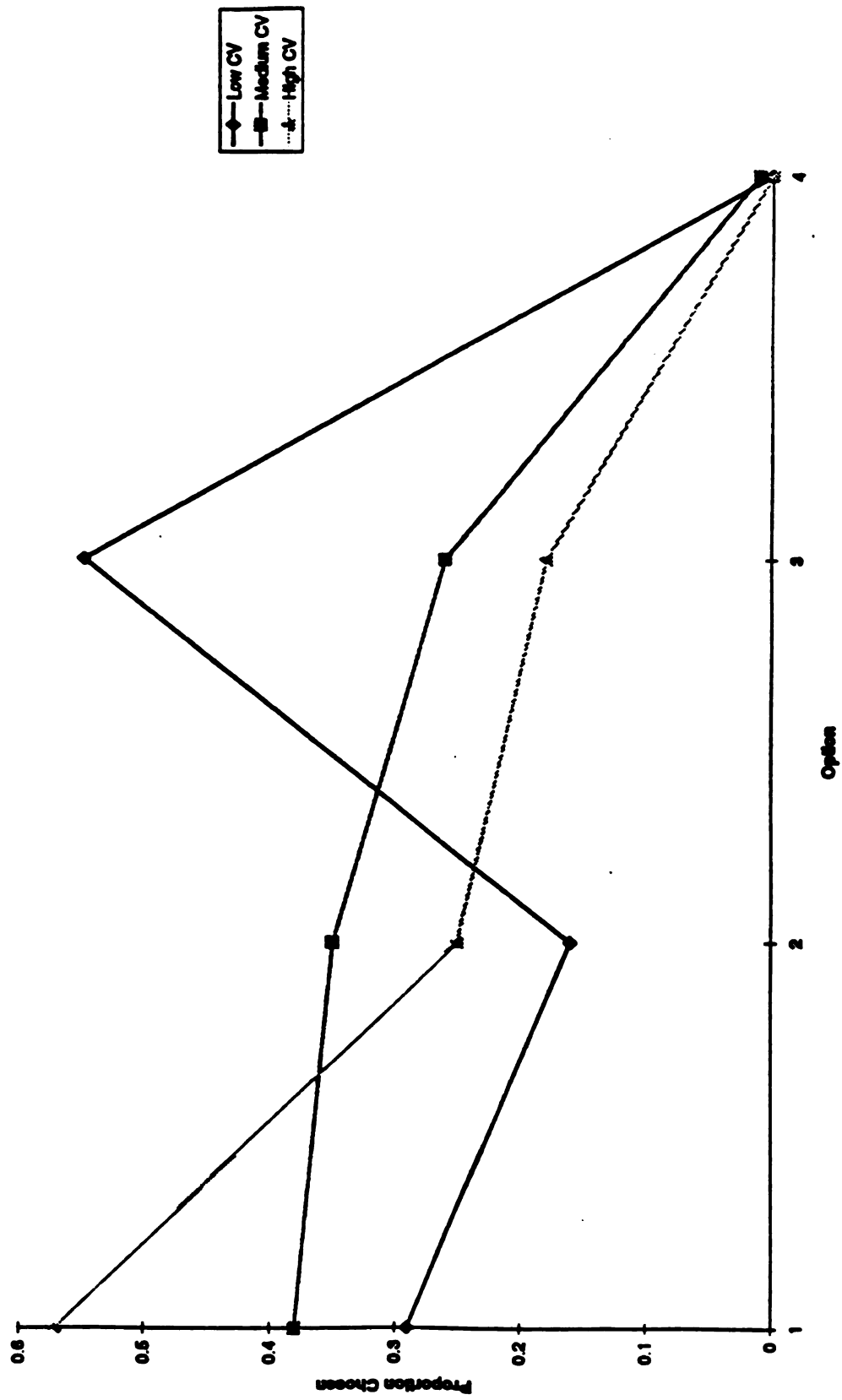
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Interaction Graphs:  
Bios



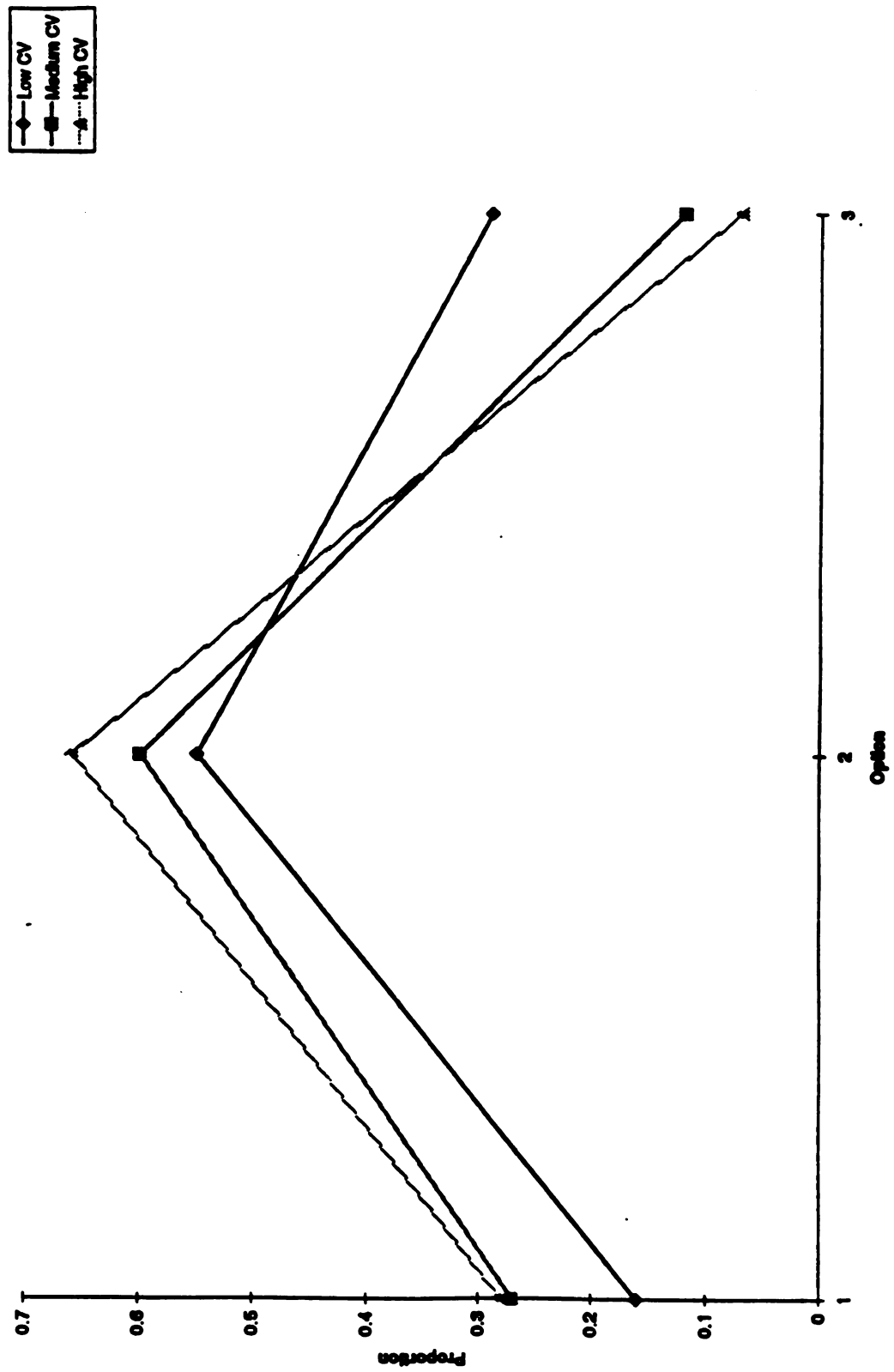
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Interaction Graphs:  
B1011



Cultural Value\*Option Choice  
Interaction Graphs:  
Blo15

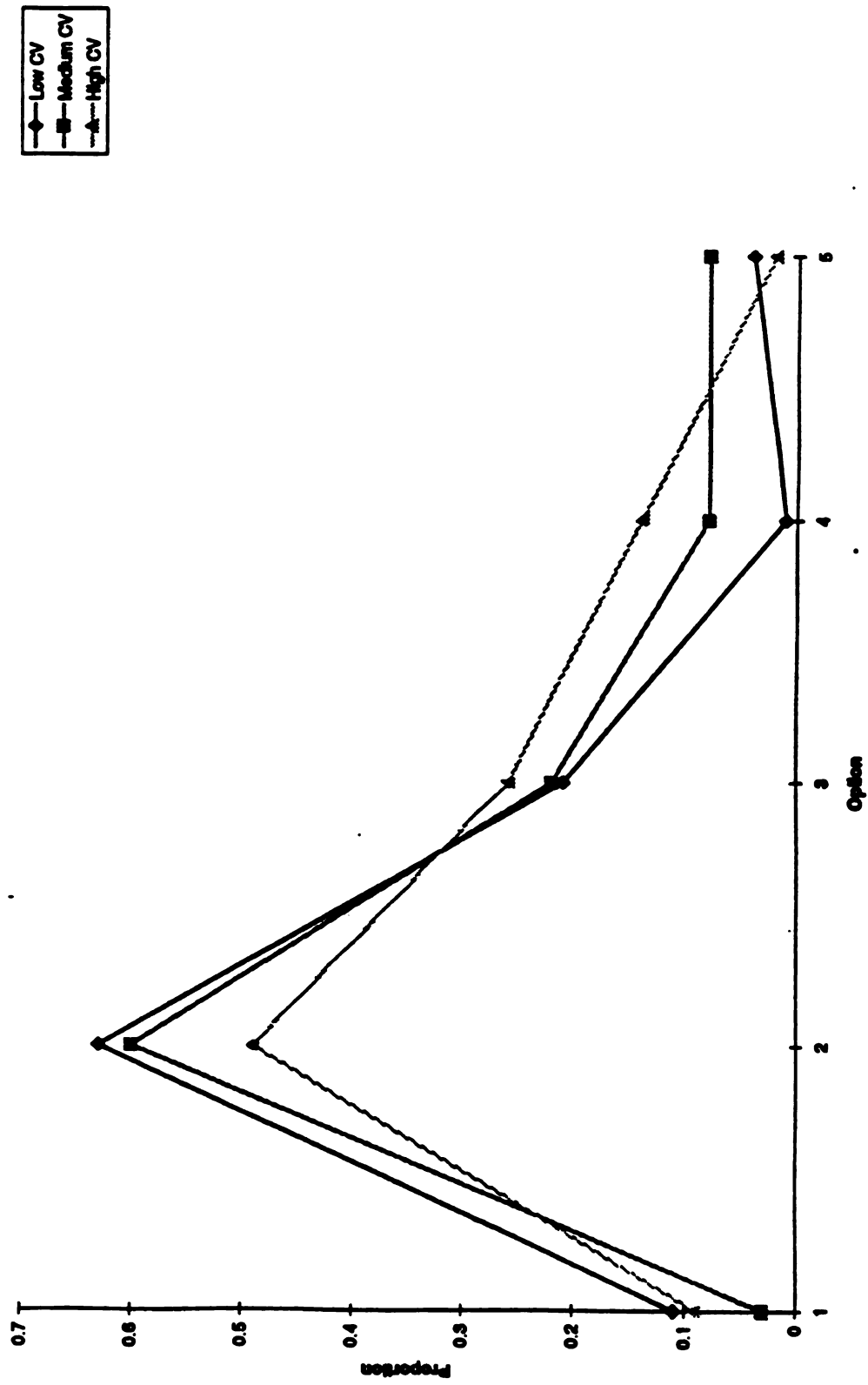


Cultural Value\*Option Choices  
Interaction Graphs:  
Bto21

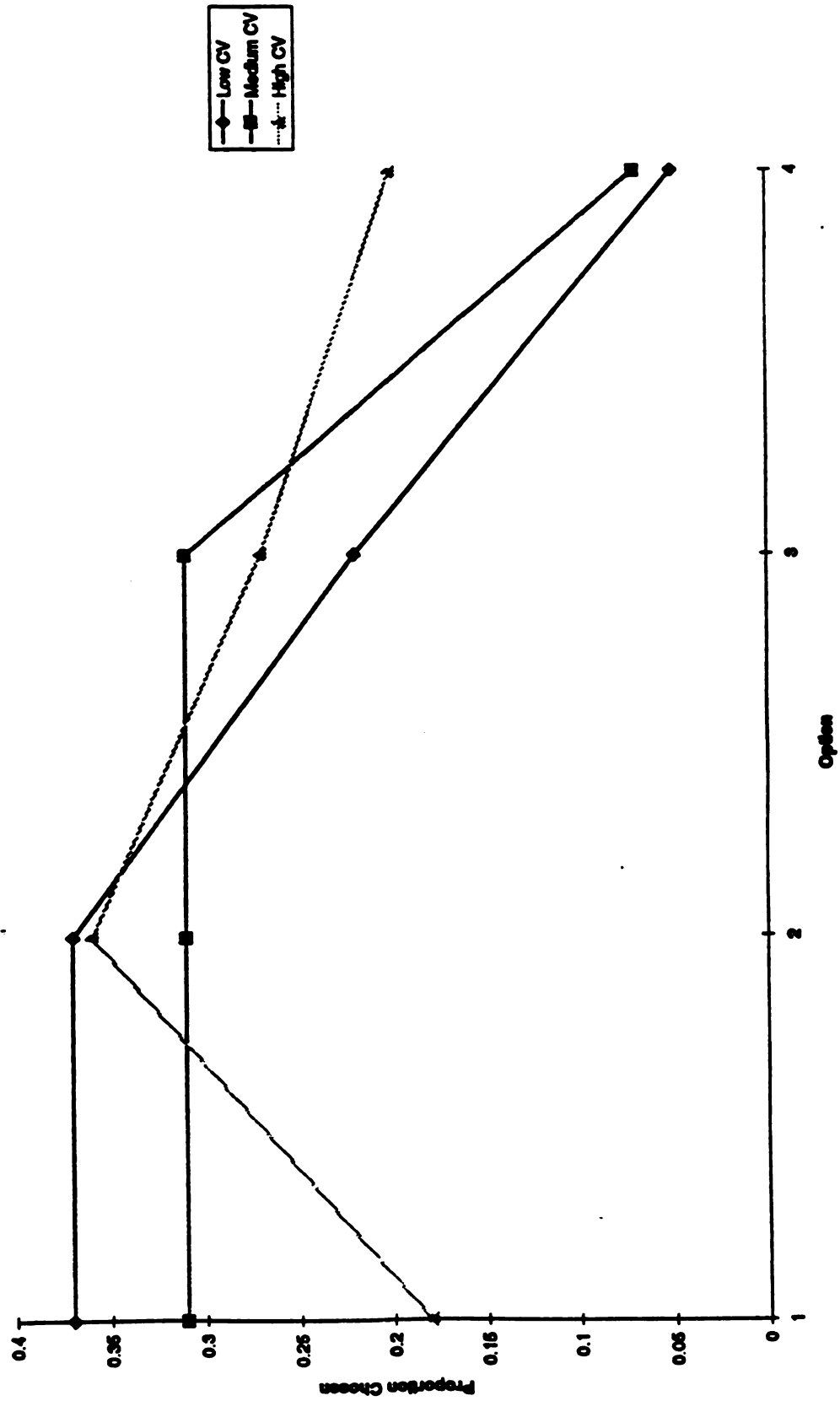




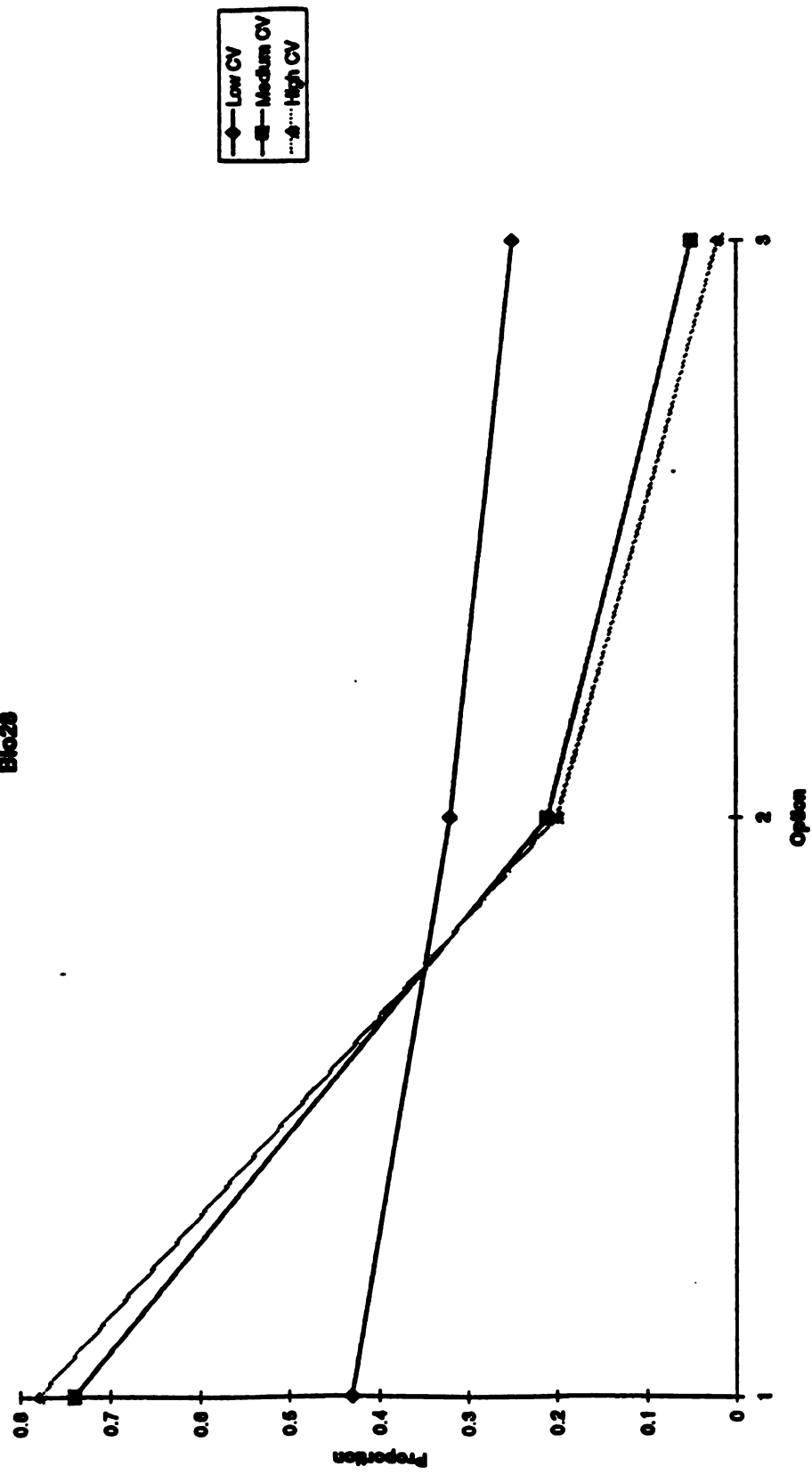
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Interaction Graphs:  
Blo25

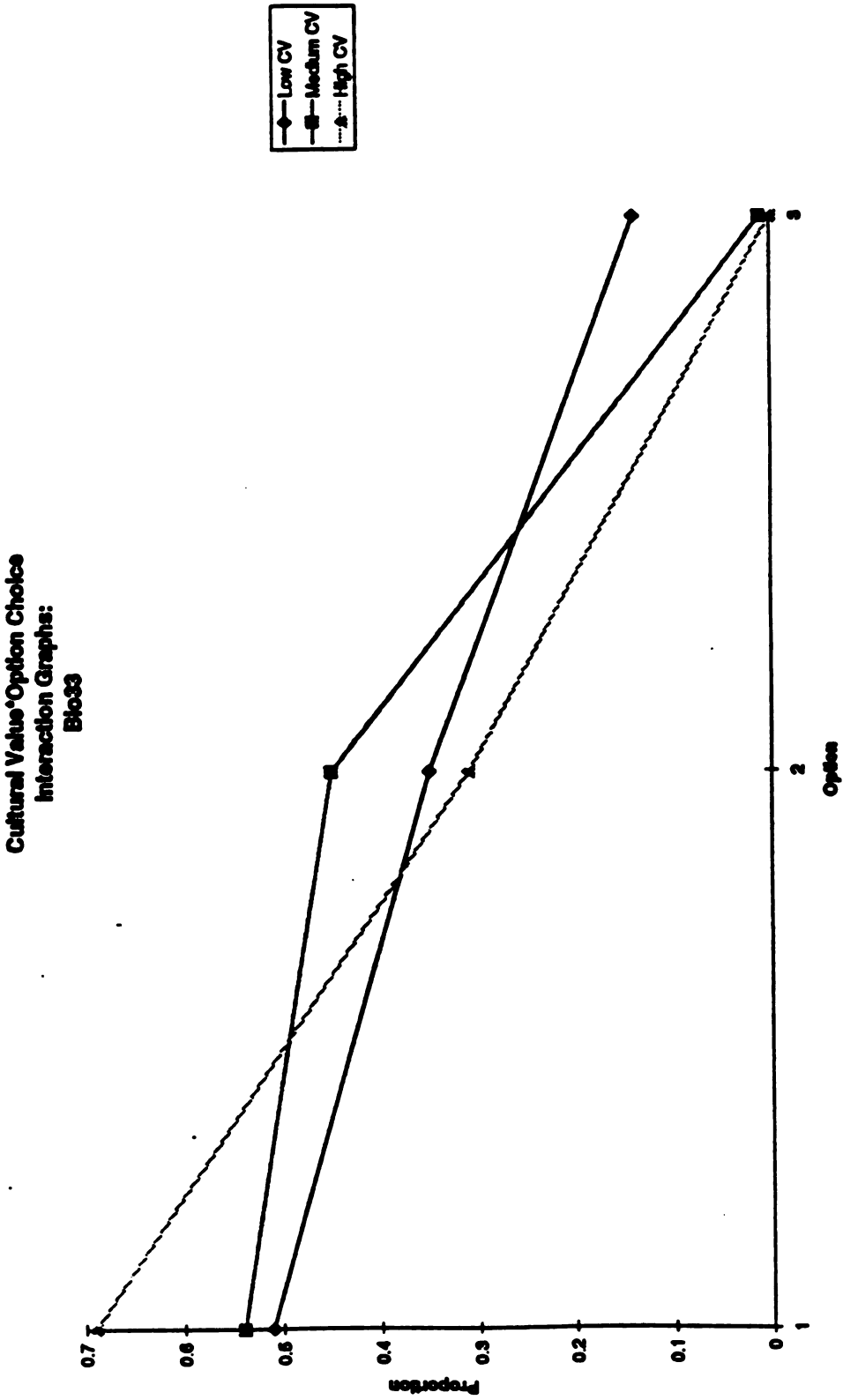


Cultural Value\*Option Choice  
Interaction Graphs:  
Blo26

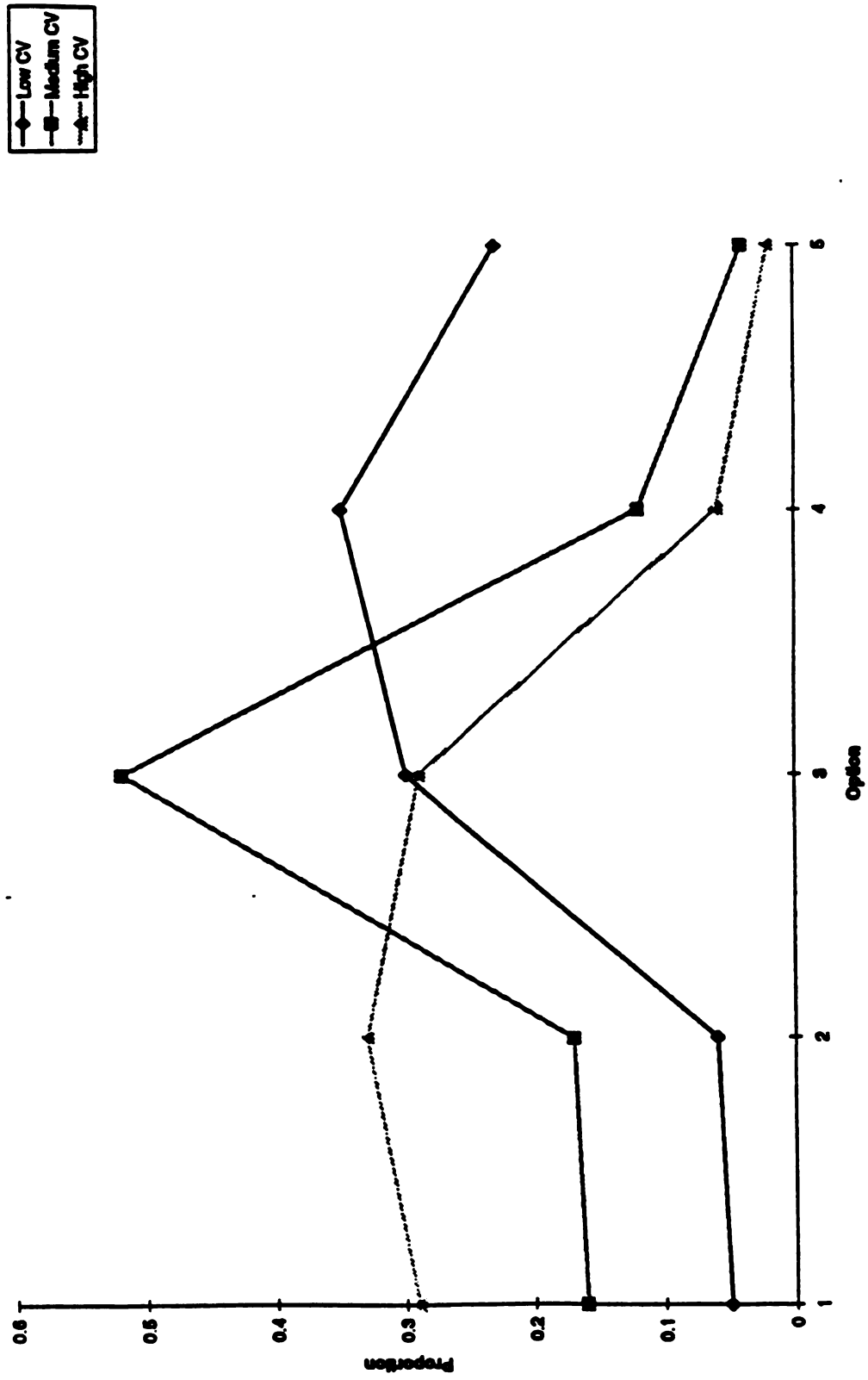


Cultural Value\*Option Choice  
Interaction Graphs:  
B1028

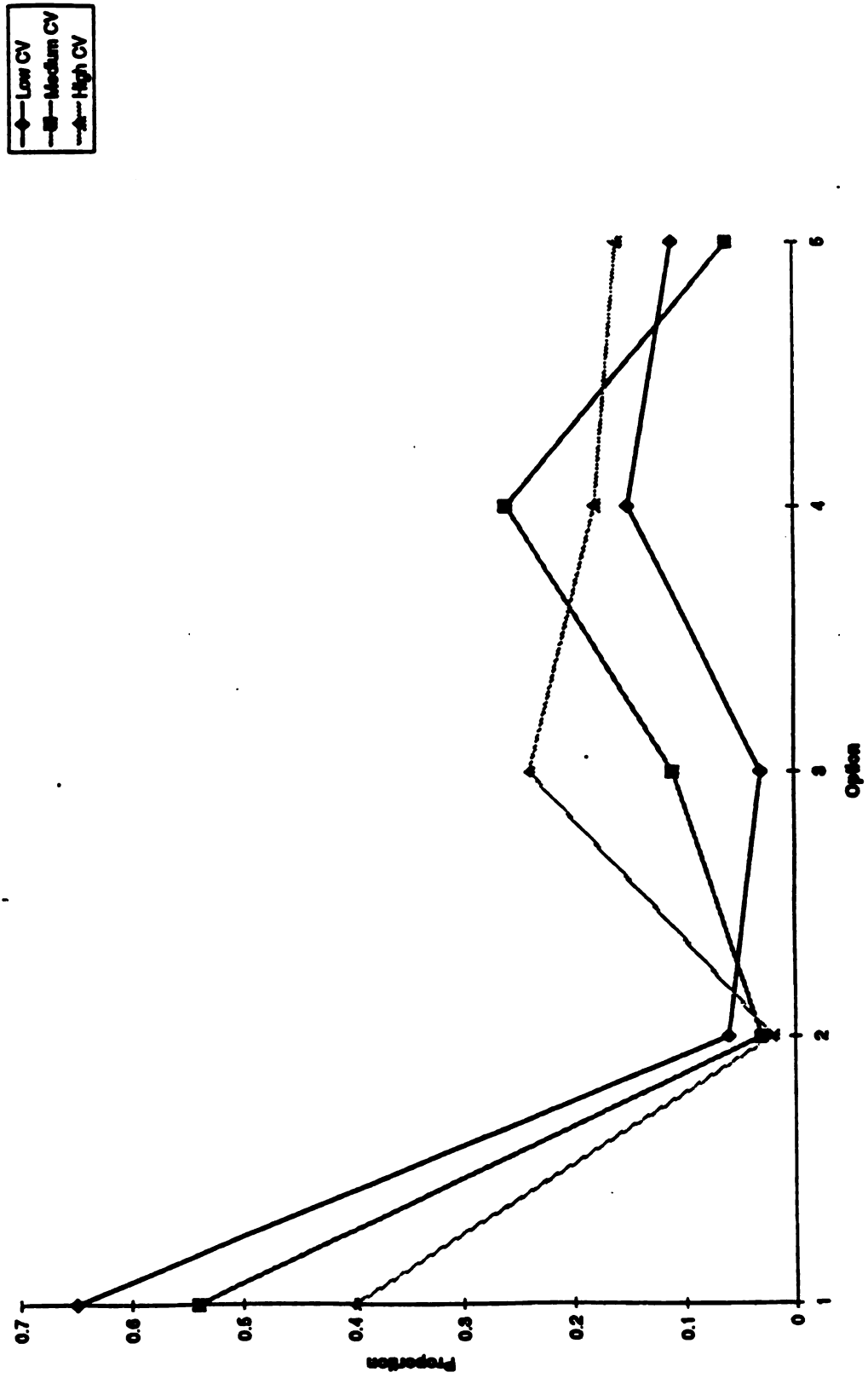




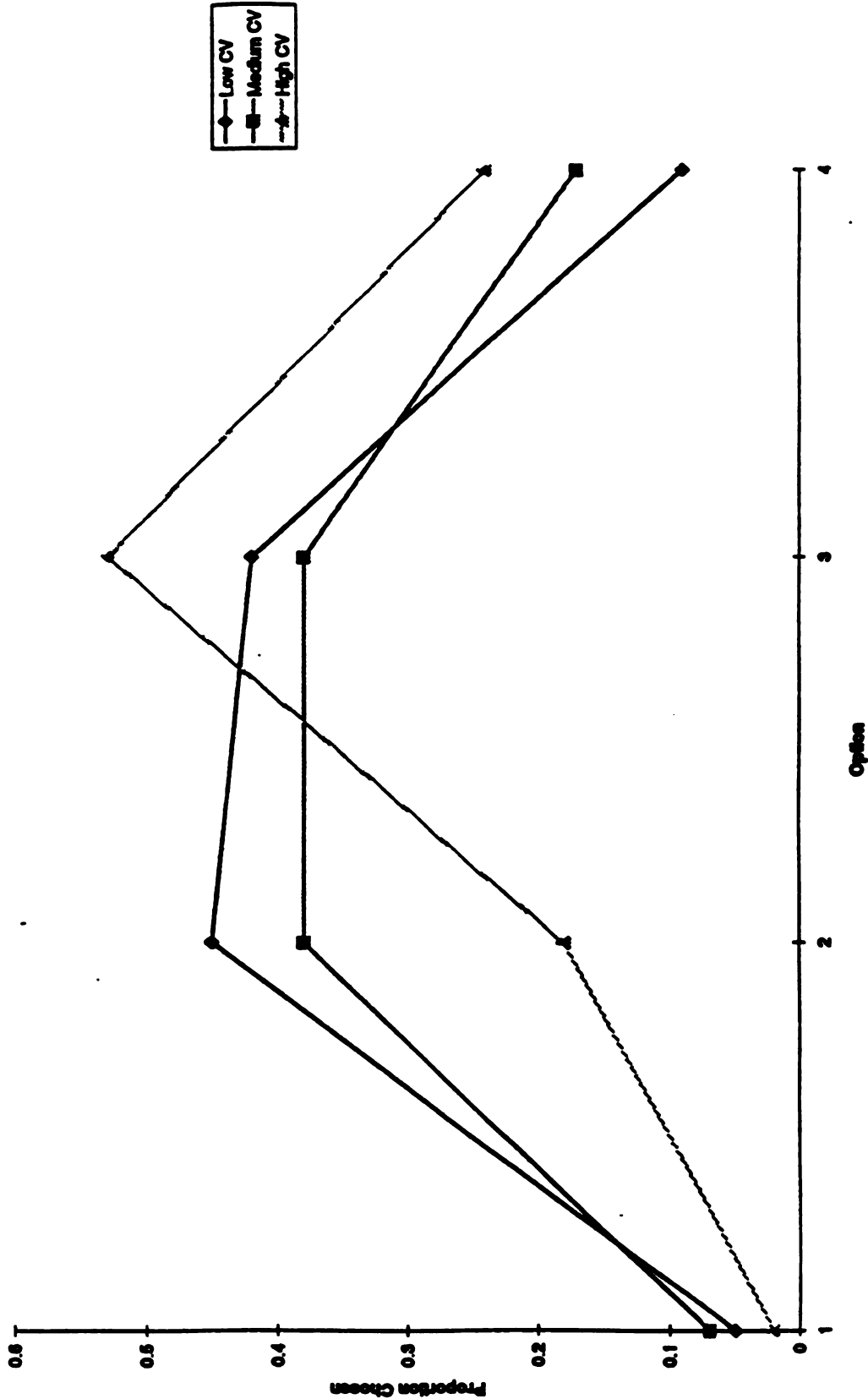
Cultural Values\* Option Choice  
Interaction Graphs:  
Blo-47



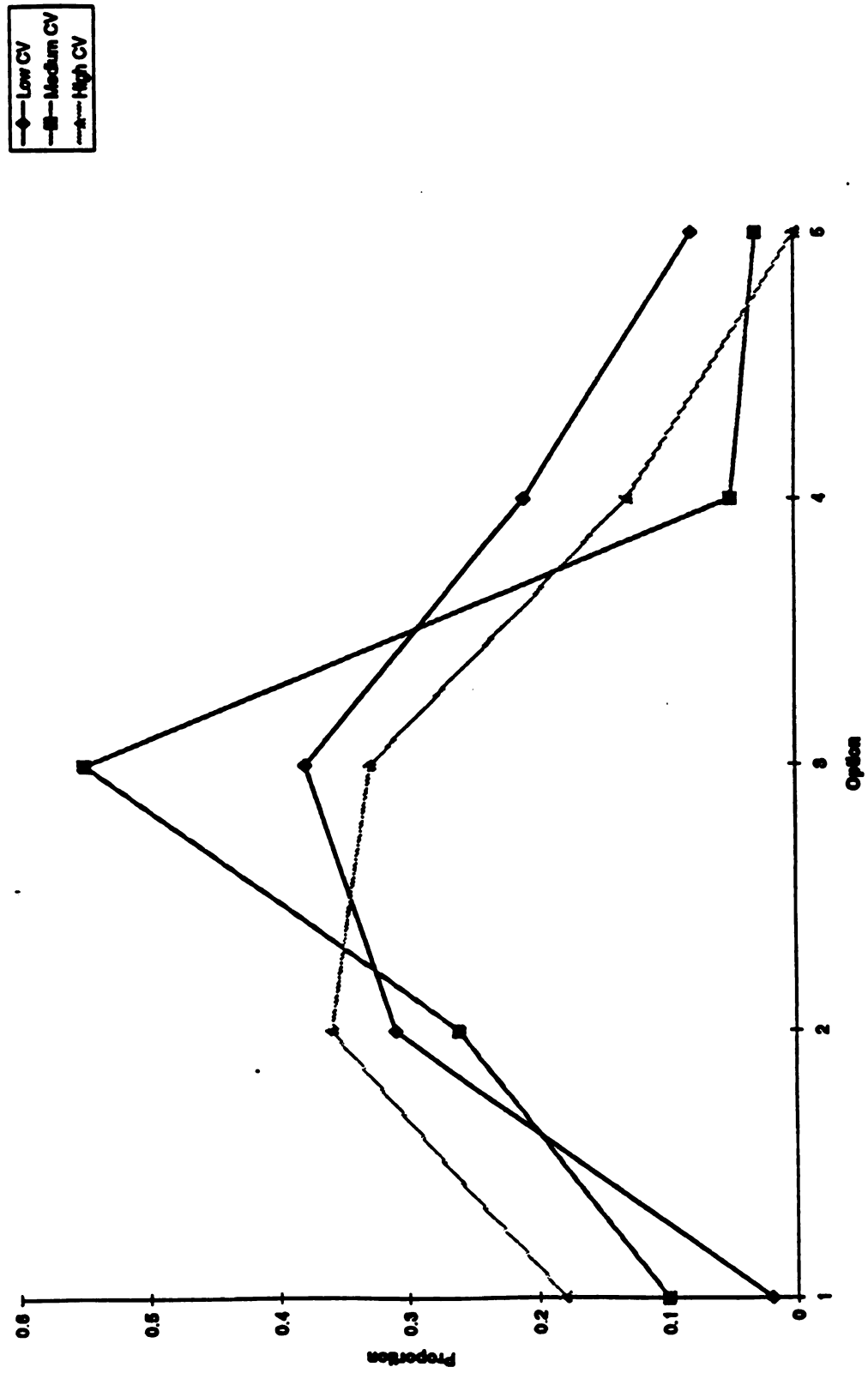
Cultural Values' Option Choice  
Interaction Graphs:  
Bfo69



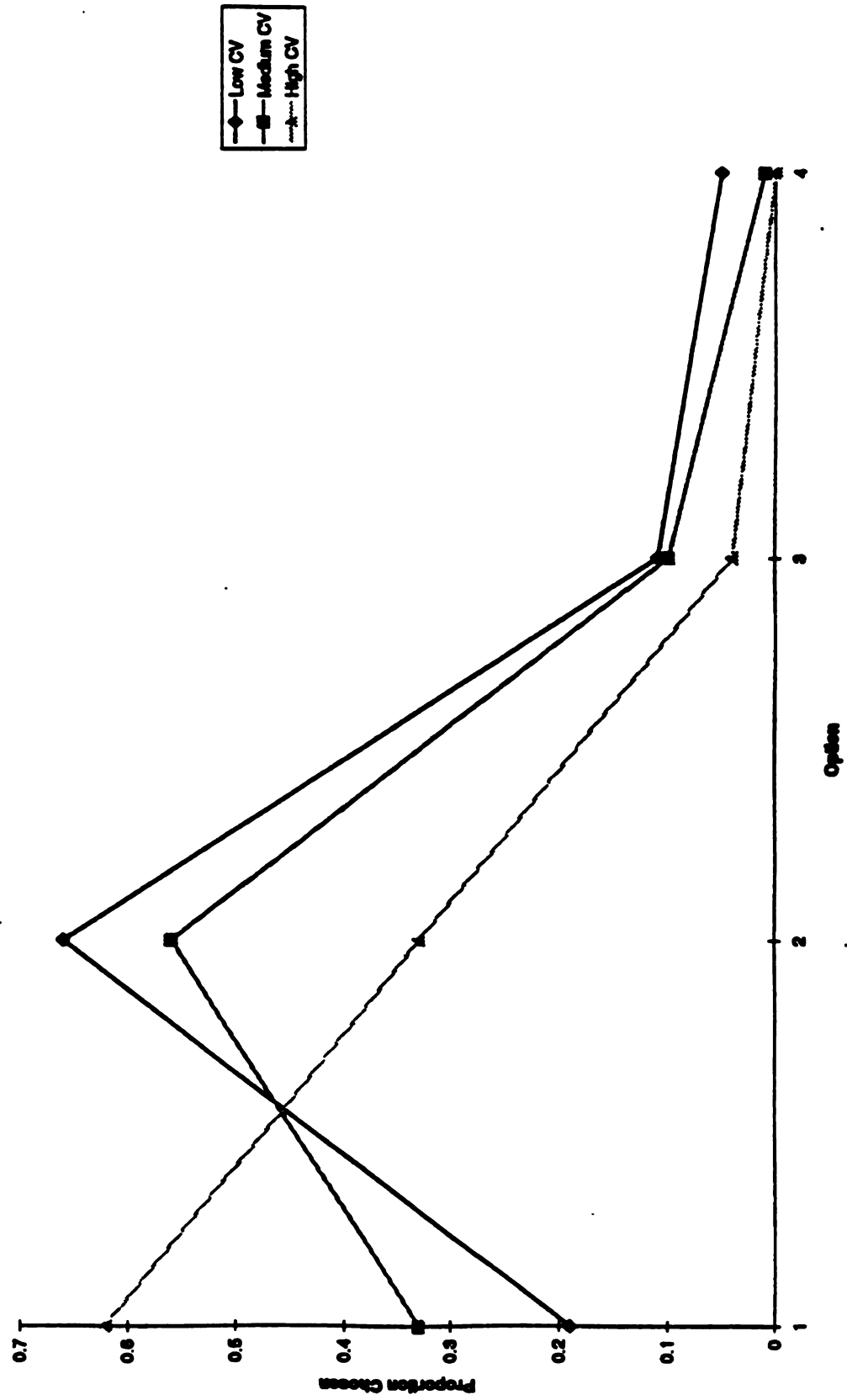
Cultural Value\*Option Choices  
Interaction Graphs:  
Blo63



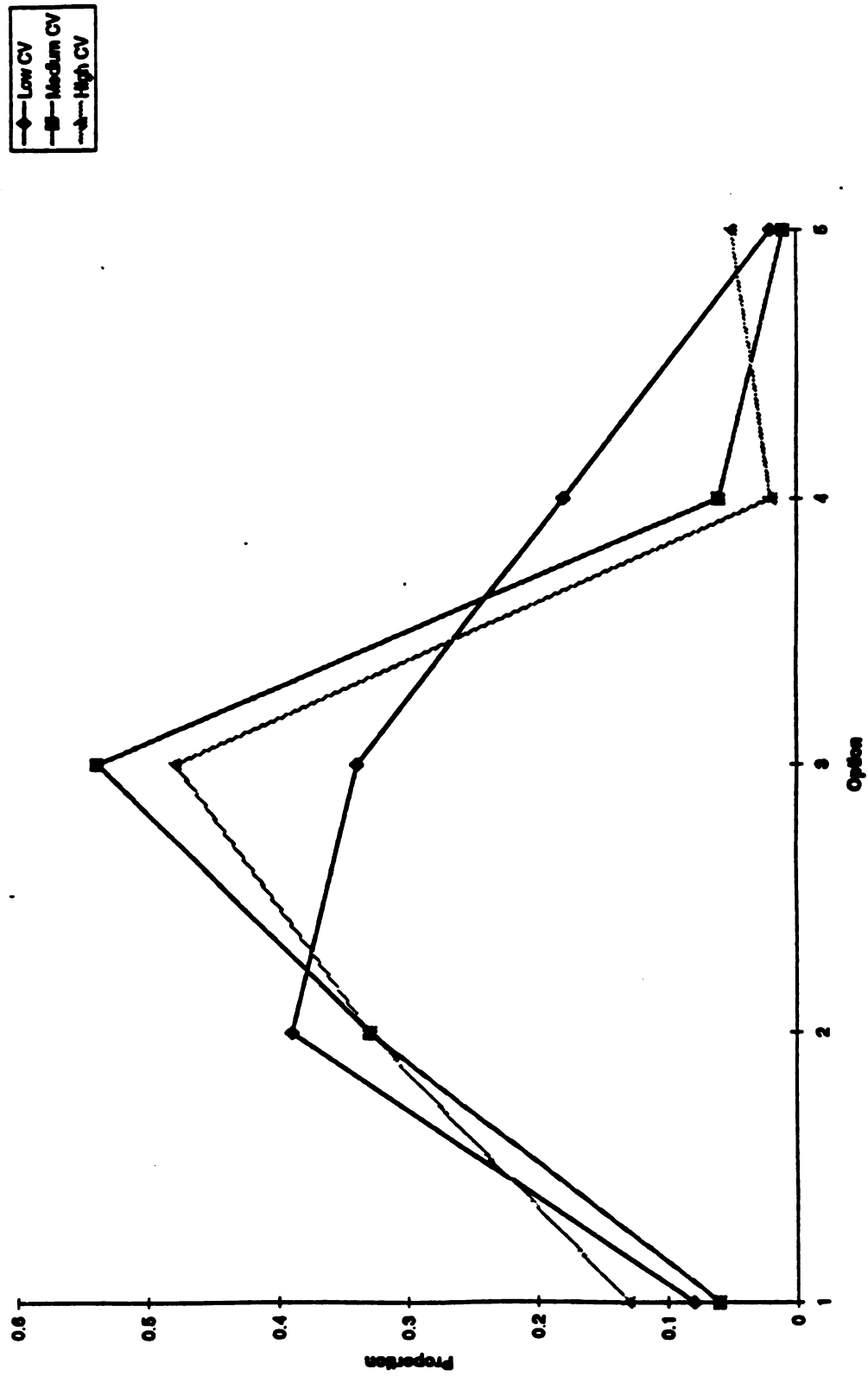
Cultural Values' Option Choice  
Interaction Graphs:  
Bib64



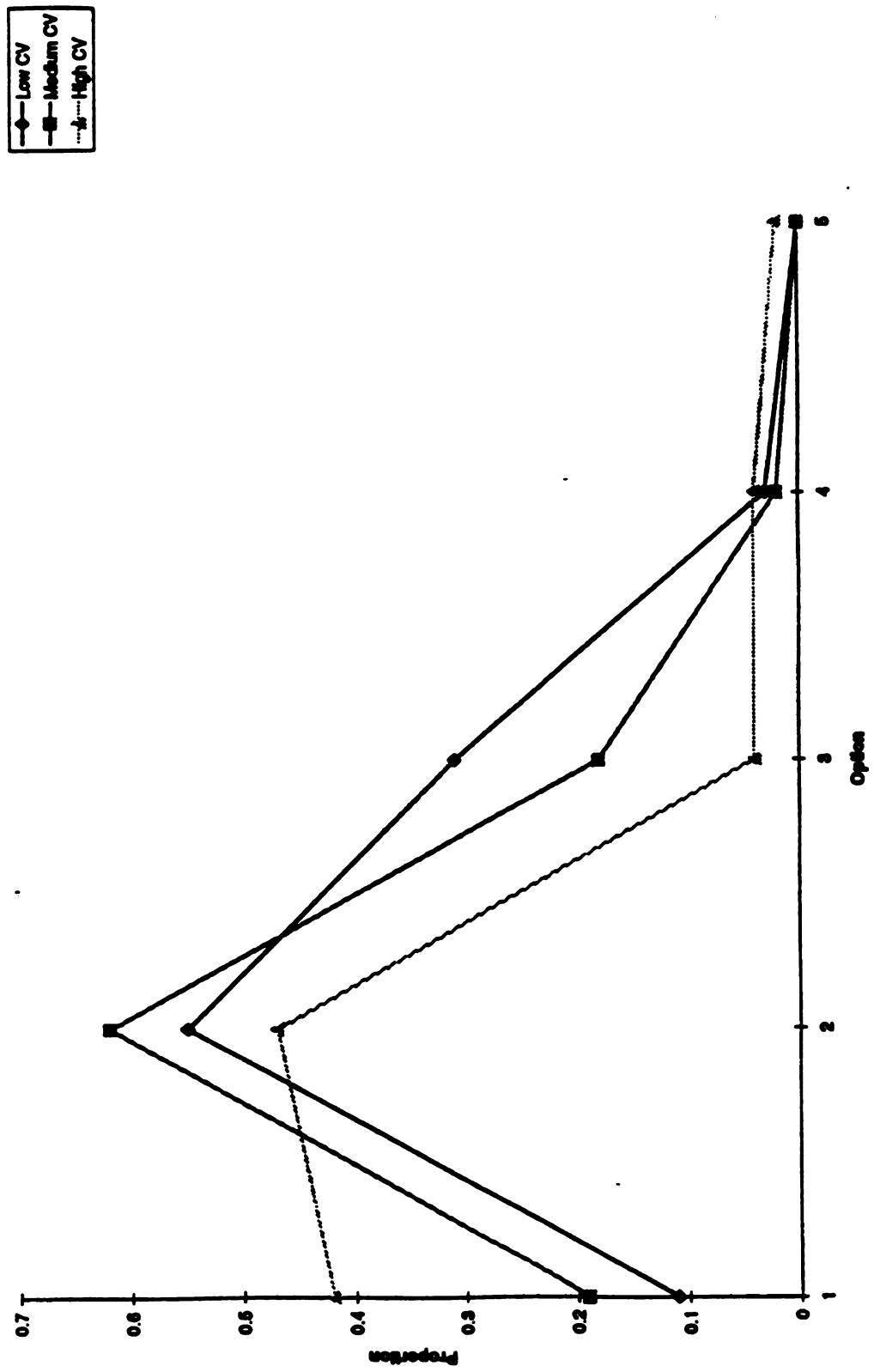
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Interaction Graphs:  
Block



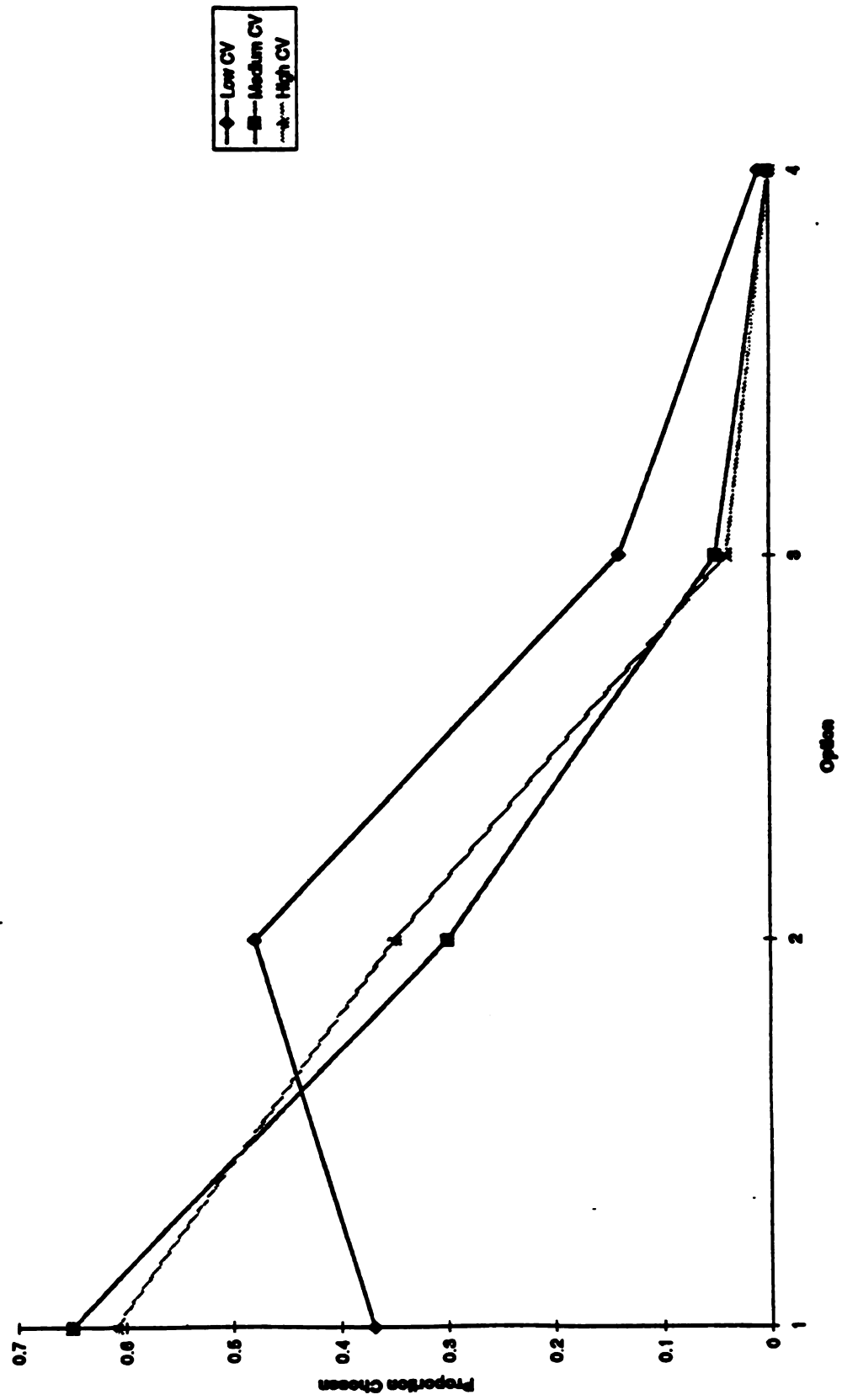
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Bto71



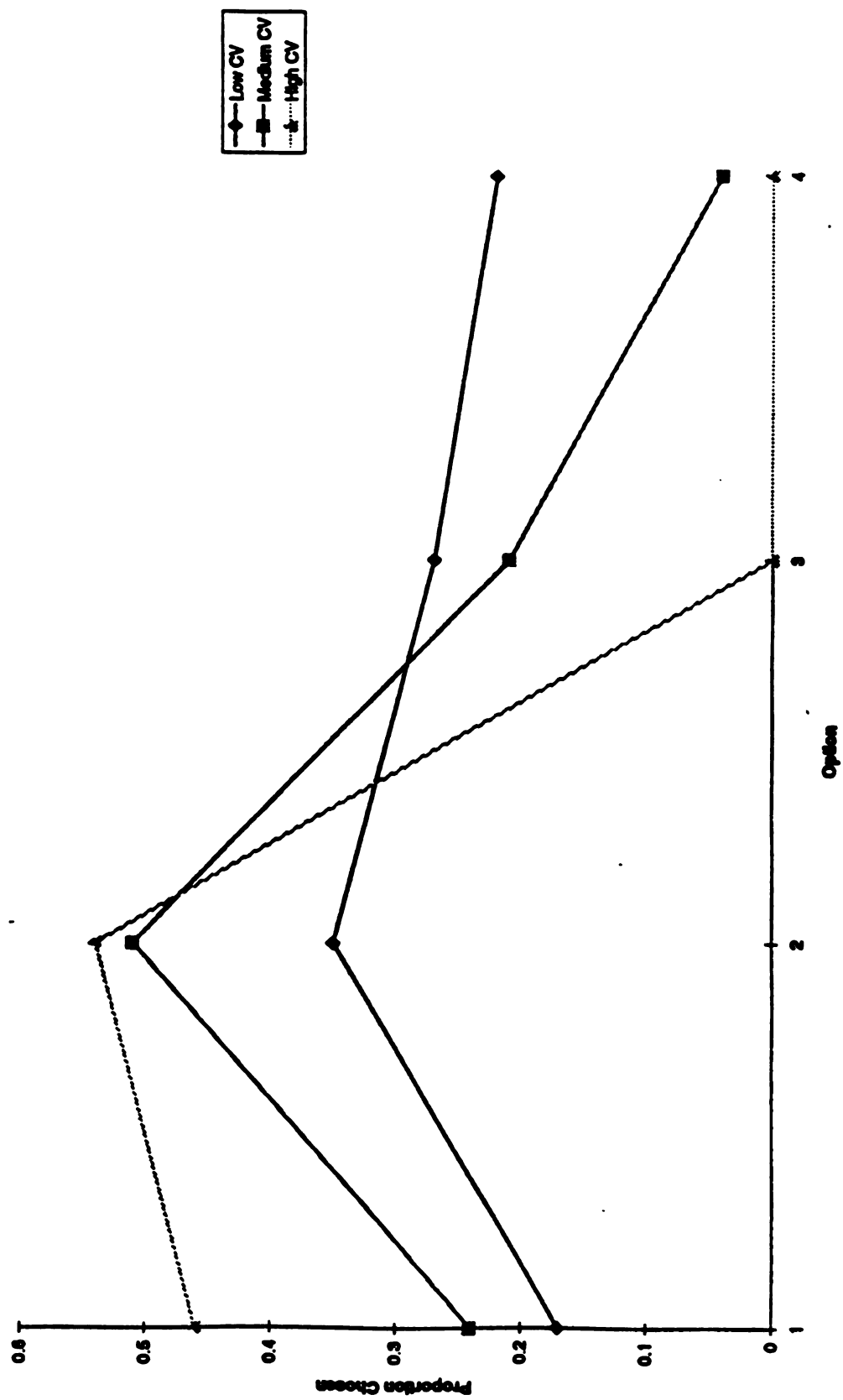
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Interaction Graphs:  
Bfo73



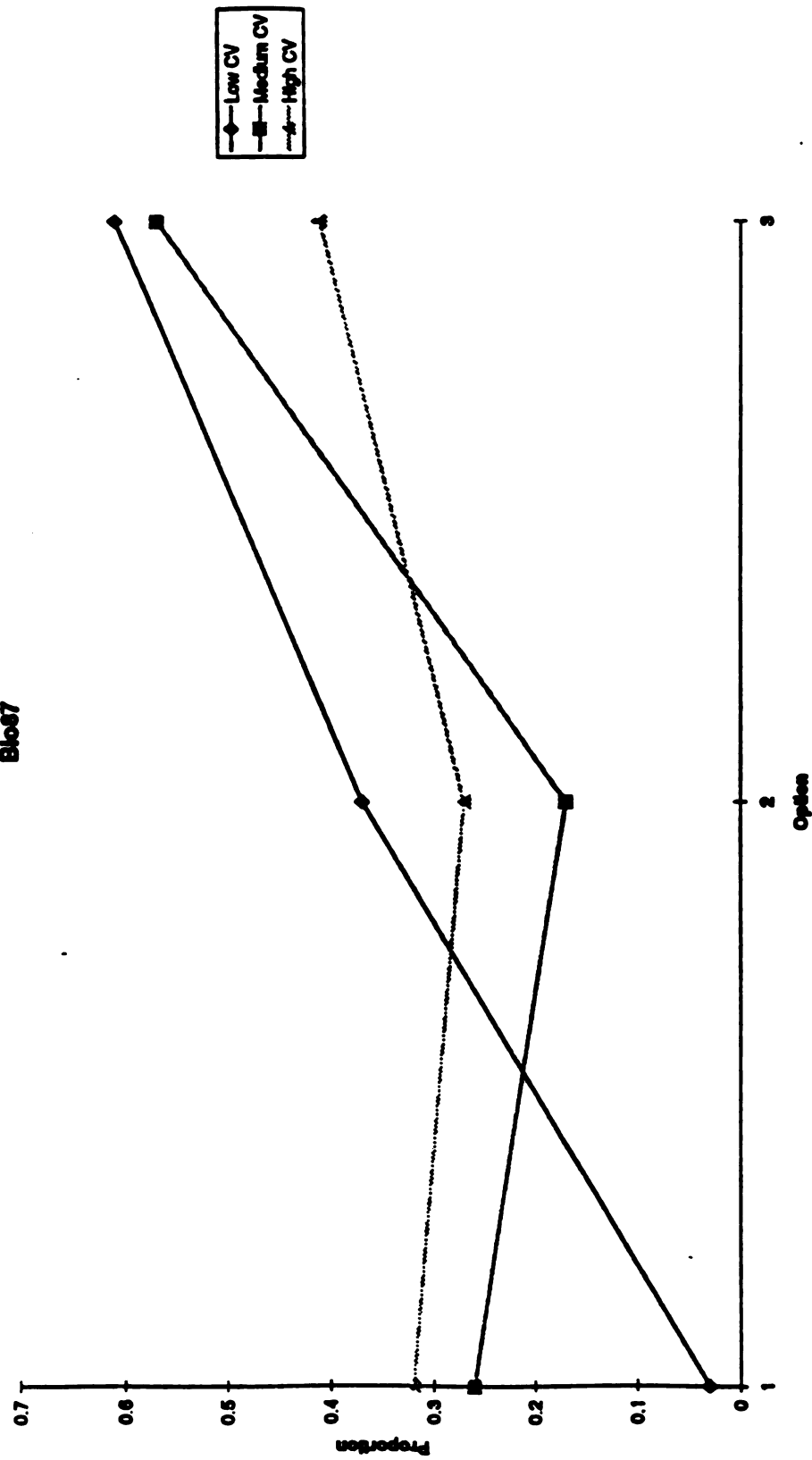
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Interaction Graphs:  
Blo76



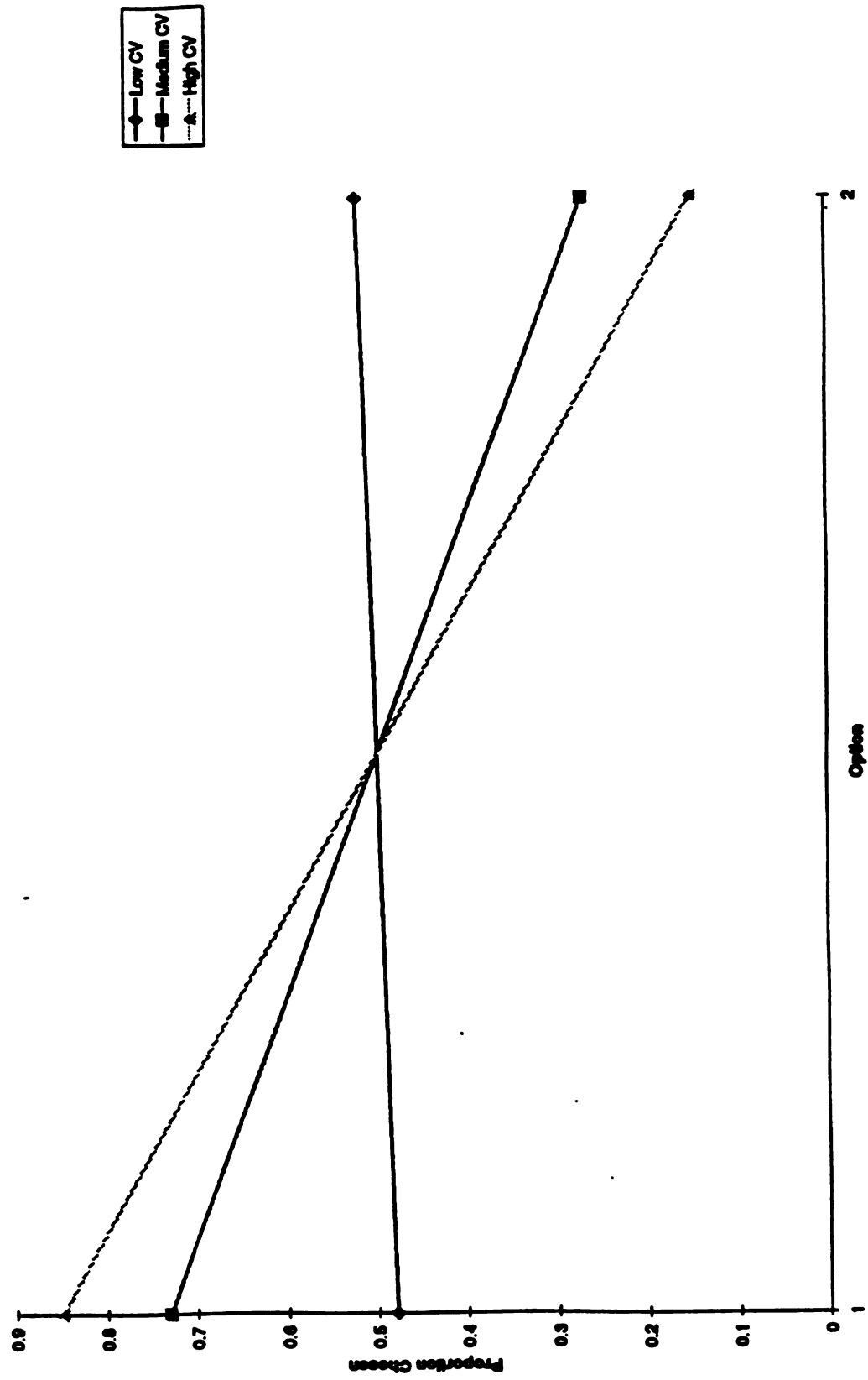
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Interaction Graphs:  
Blo77



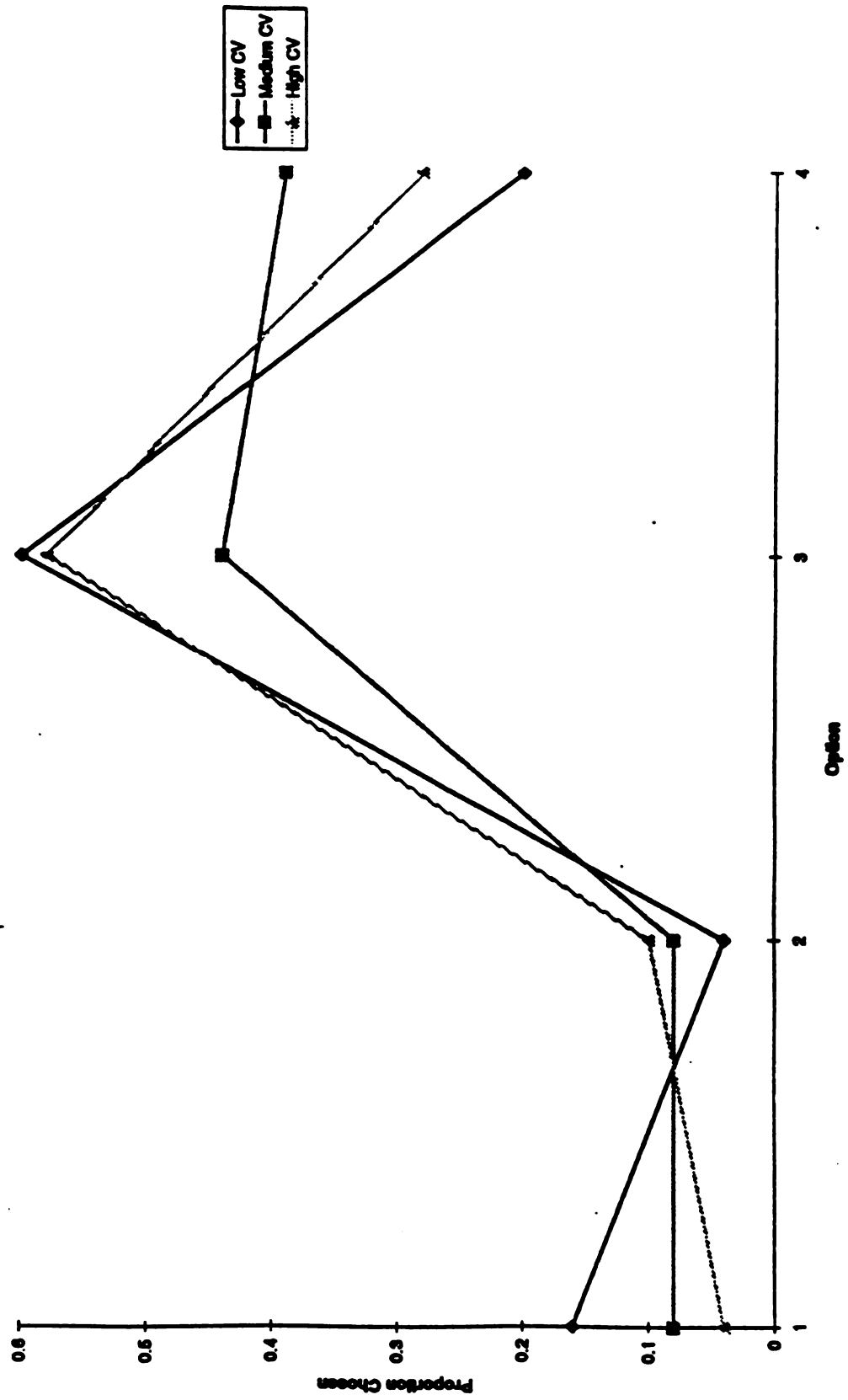
Cultural Value\*Option Choice  
Interaction Graphs:  
Bloss7



Cultural Value\*Option Choices  
Interaction Graphs:  
Bto66



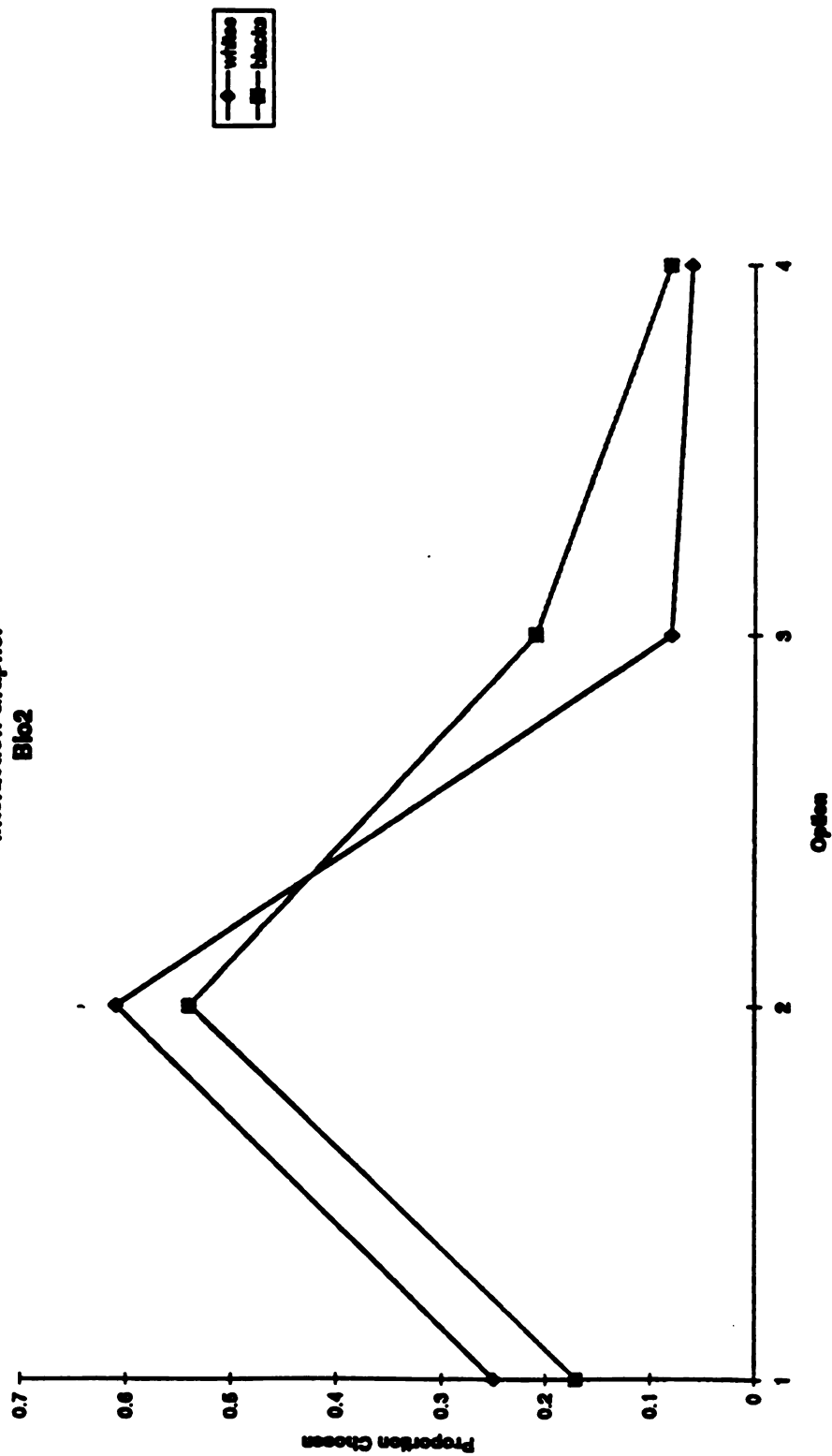
Cultural Value\*Option Choice  
Interaction Graphs:  
Blo110



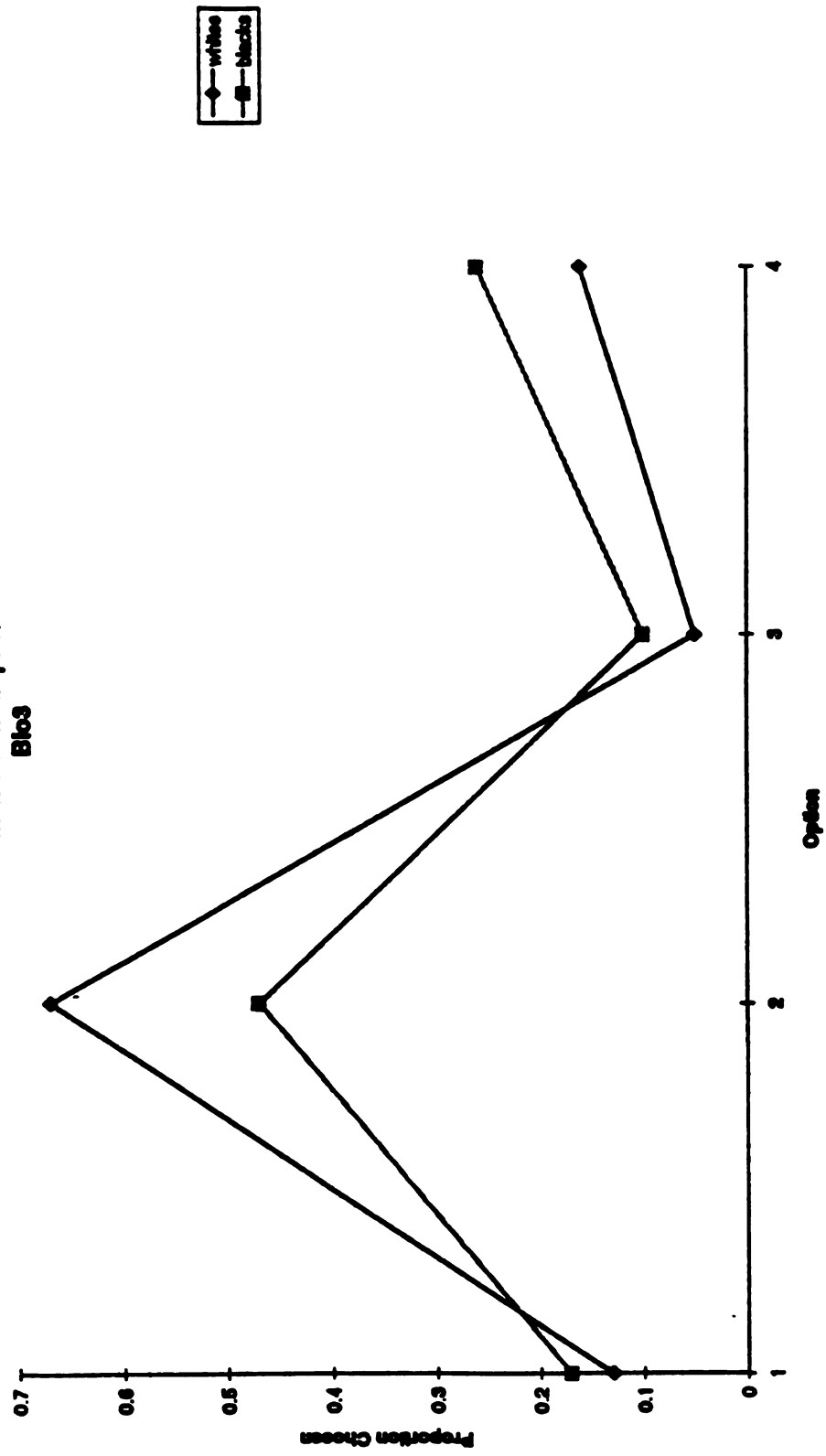


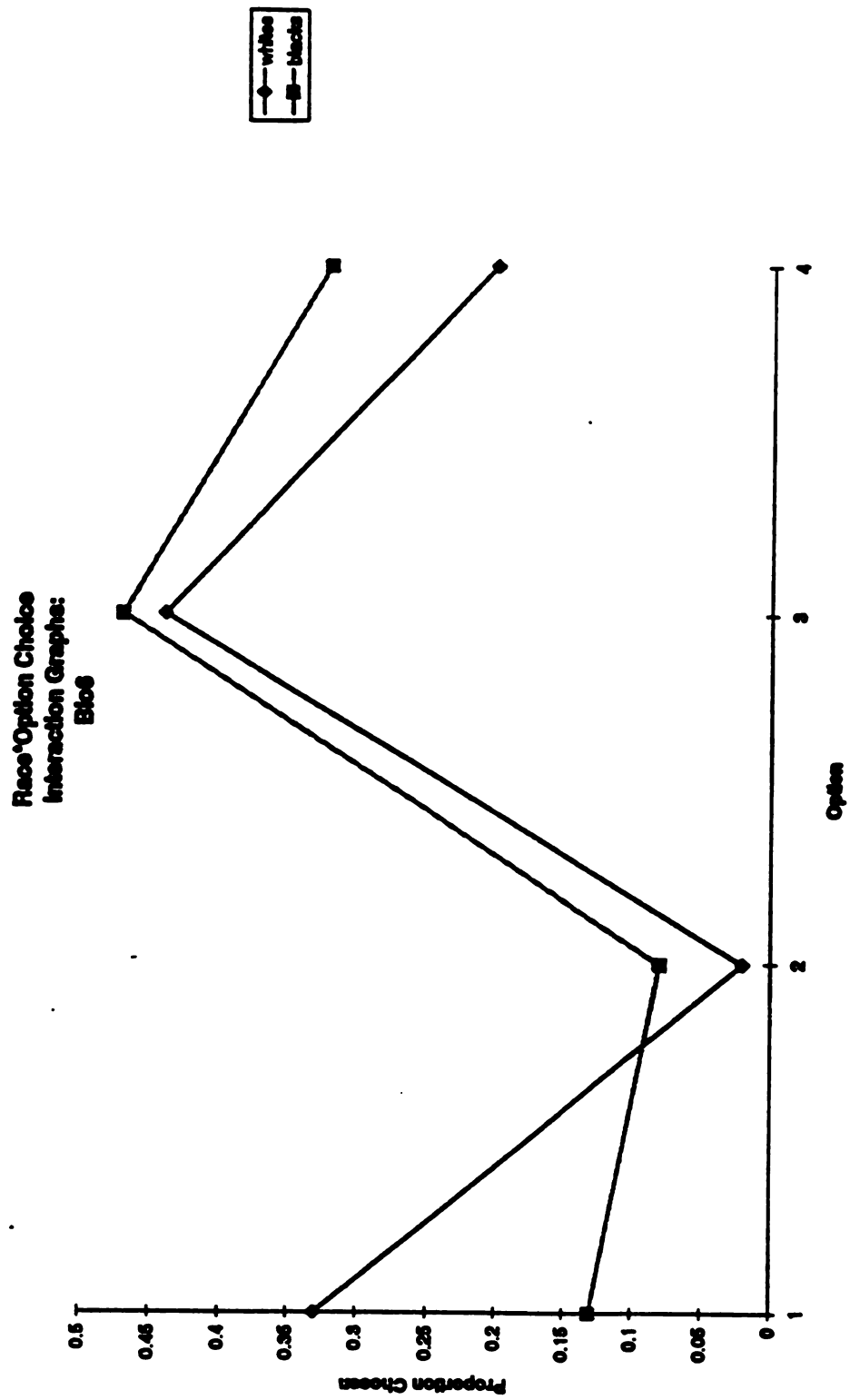
## **APPENDIX E**

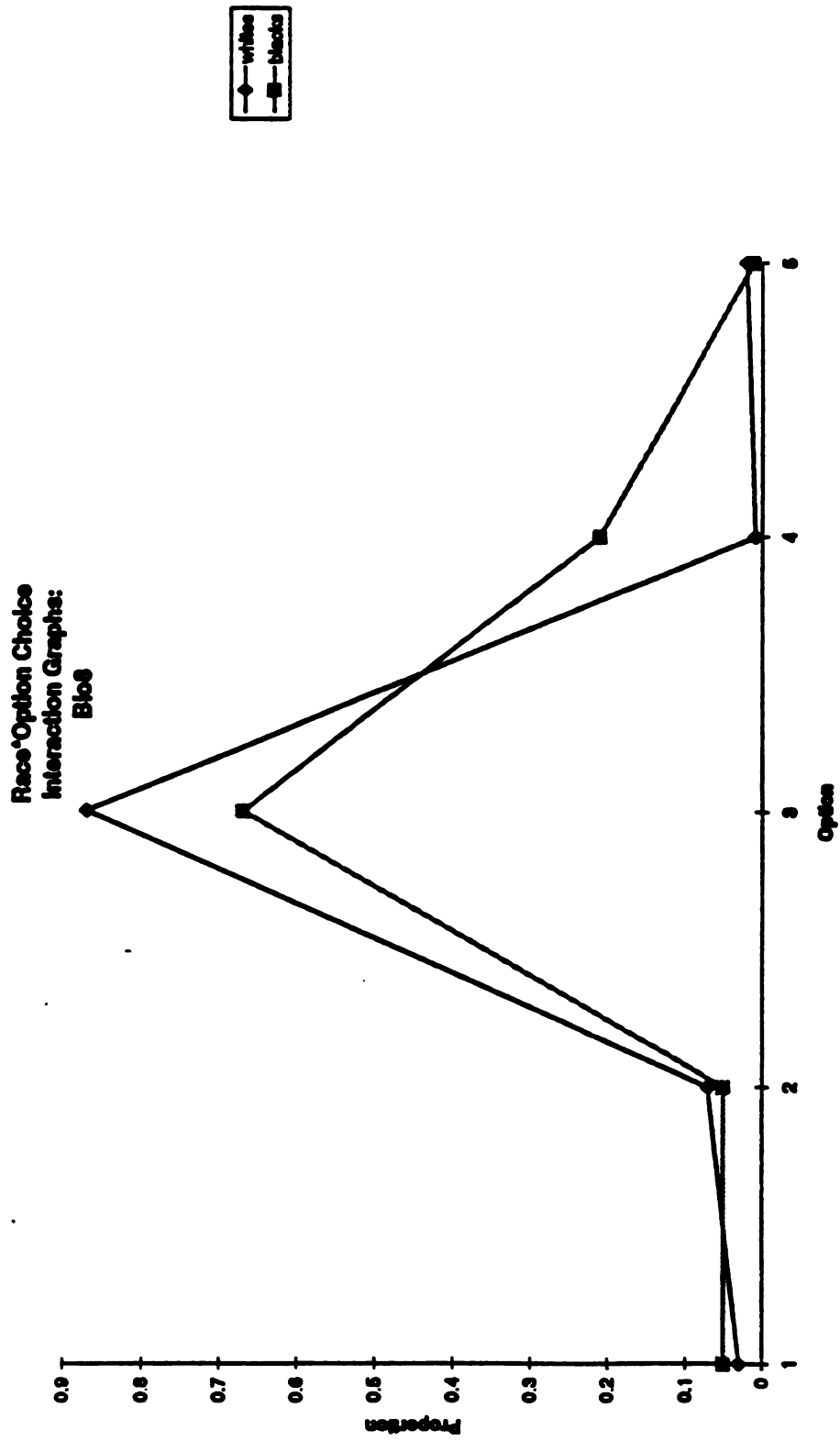
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Interaction Graphs:  
Blo2



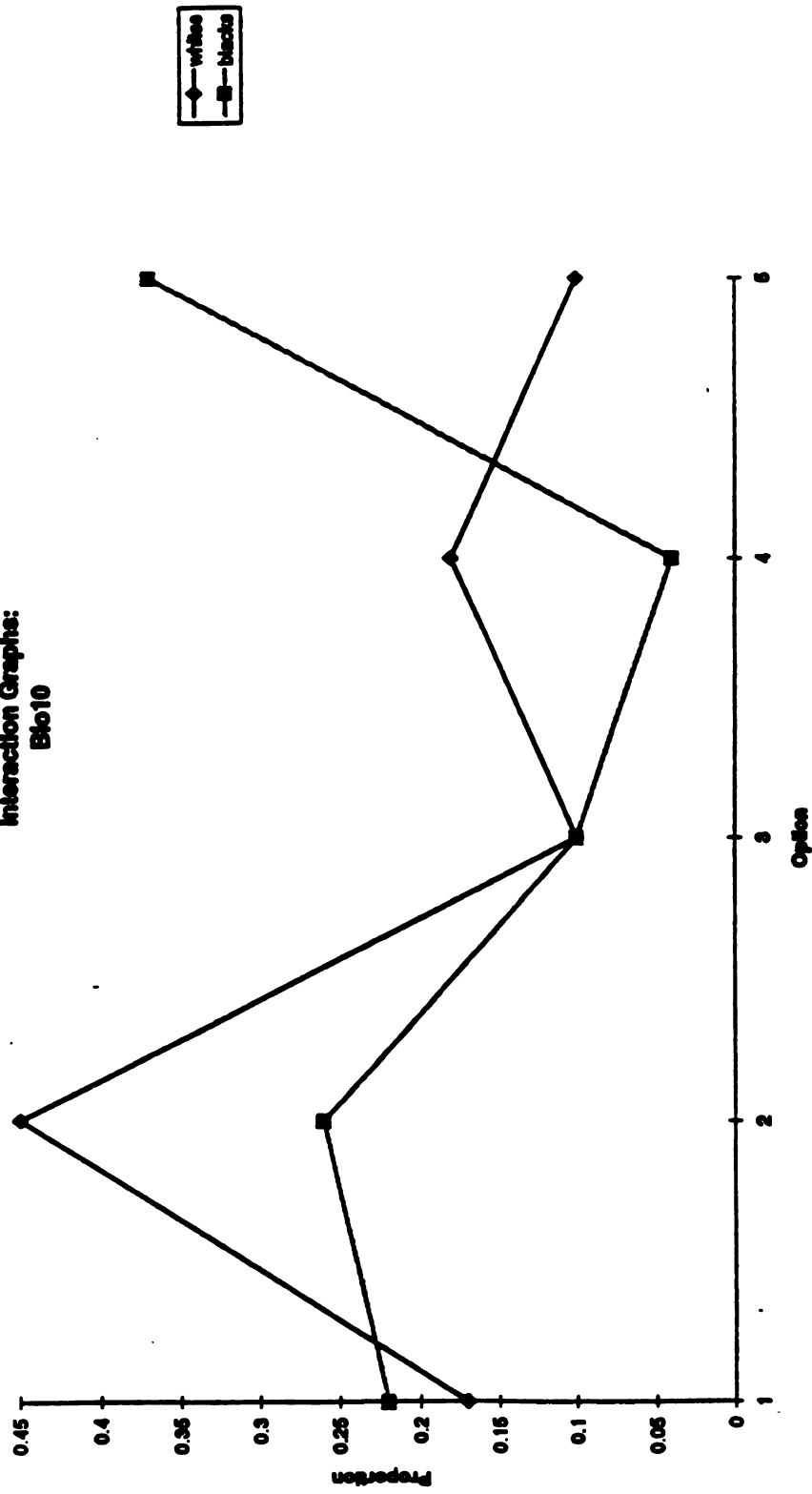
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Blo3

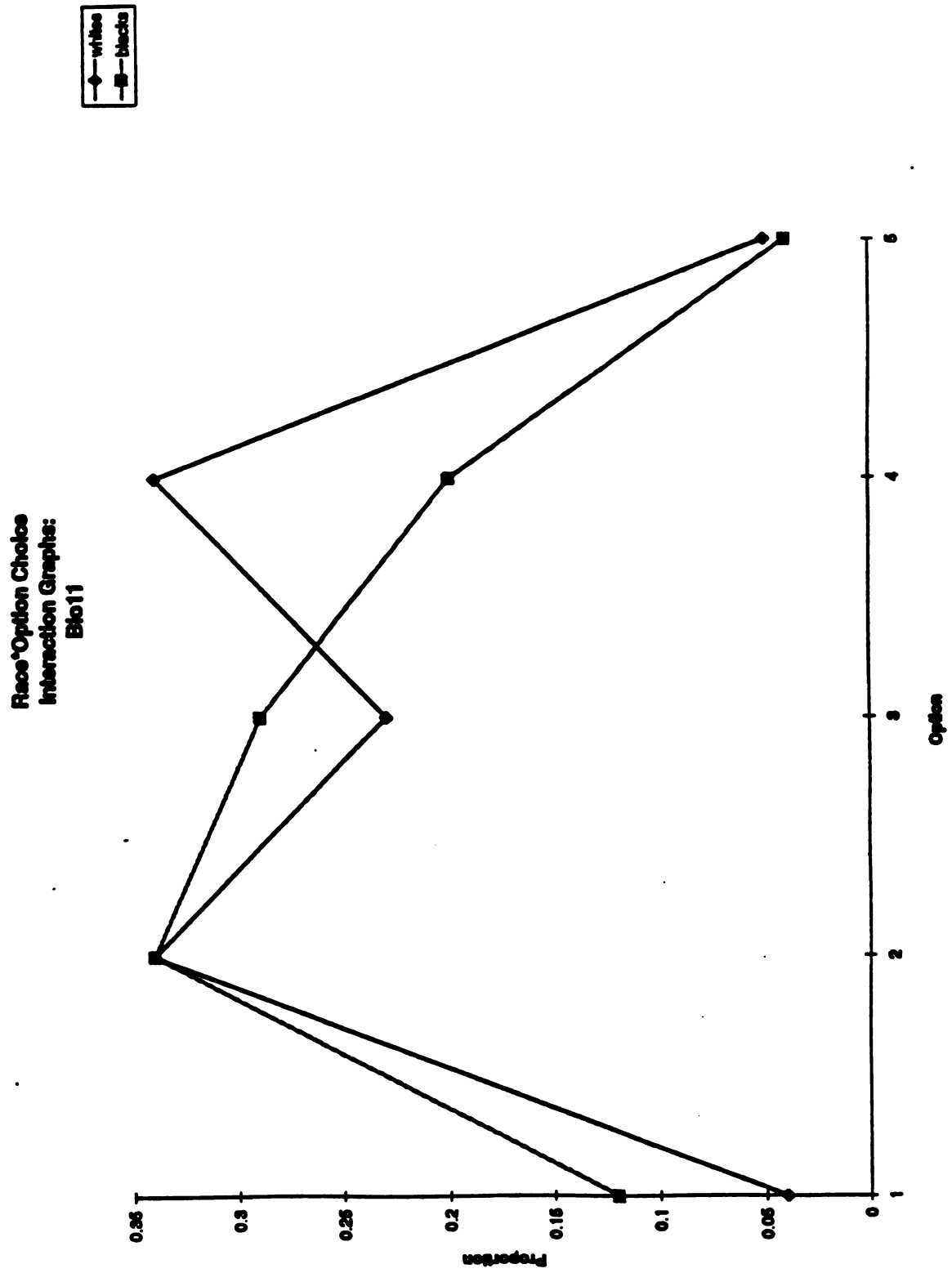




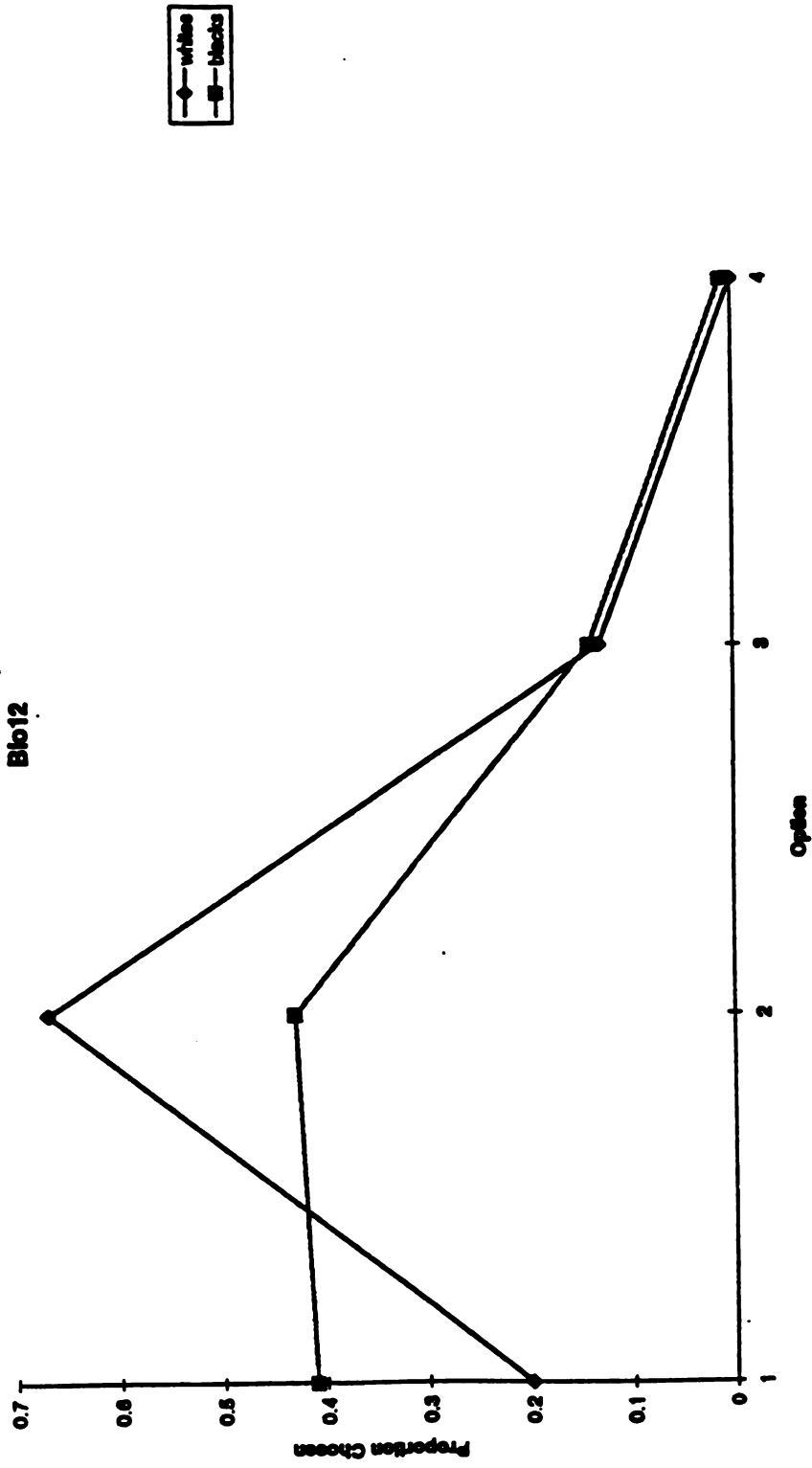


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Interaction Graphs:  
Bto10

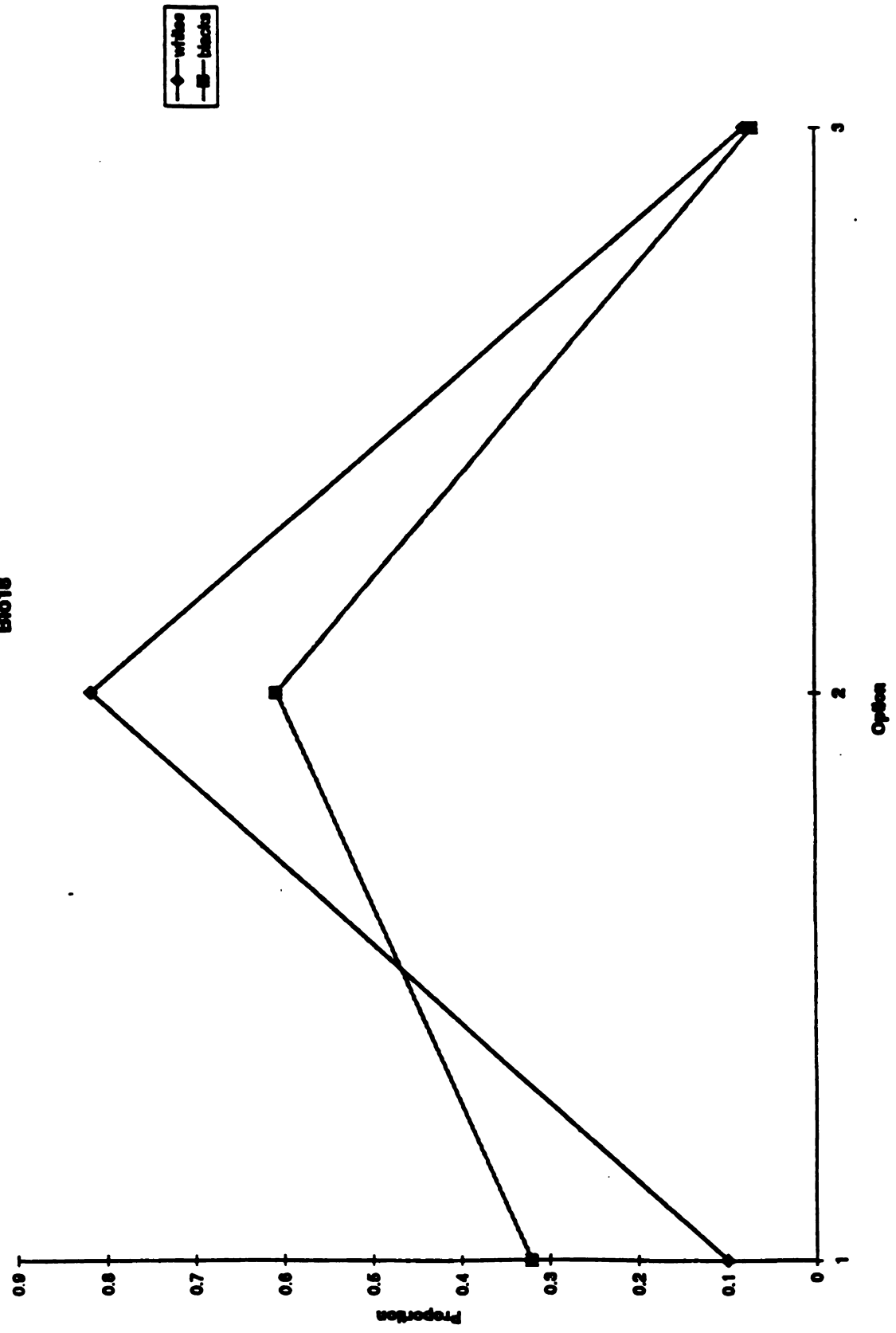


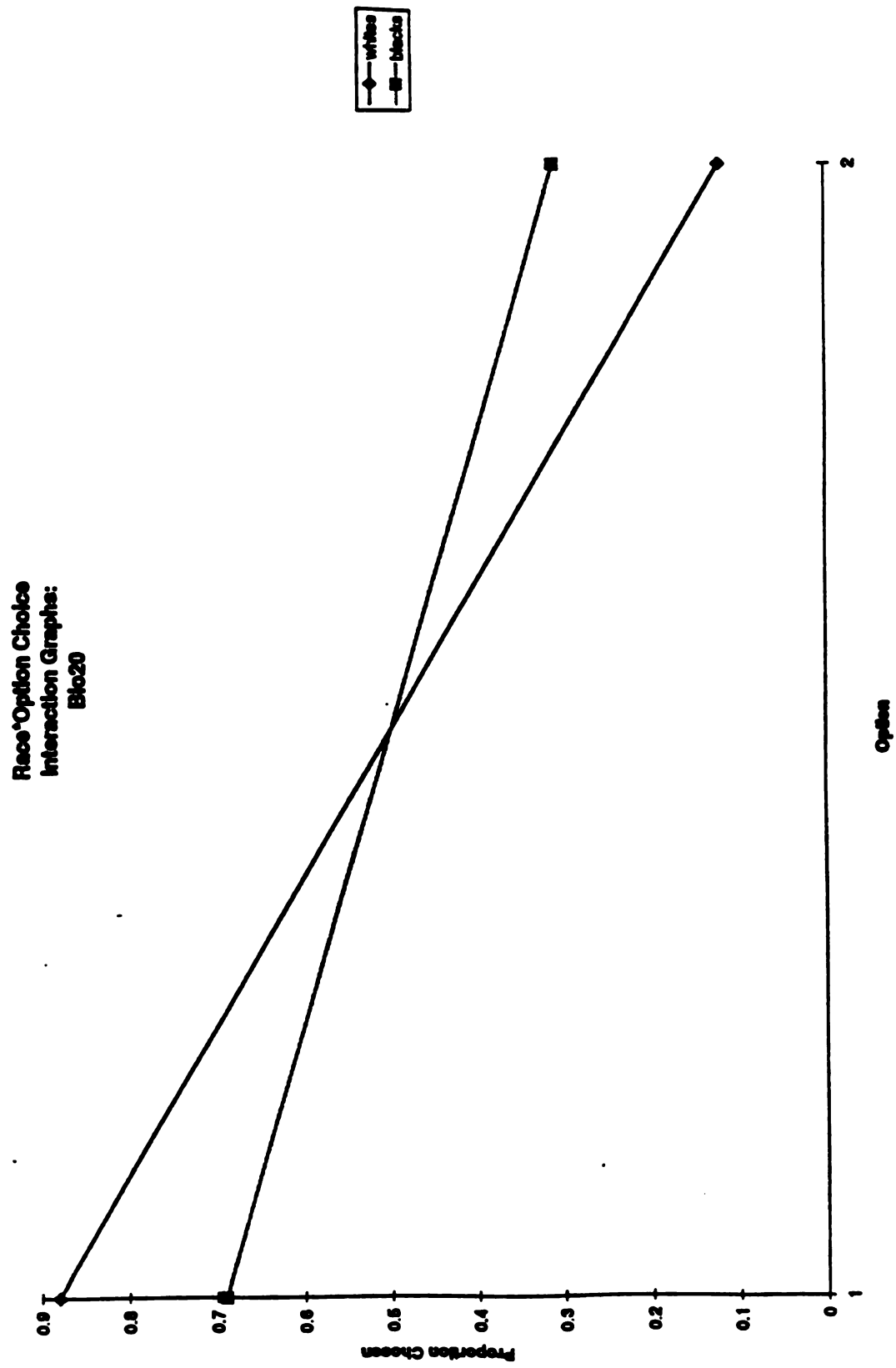


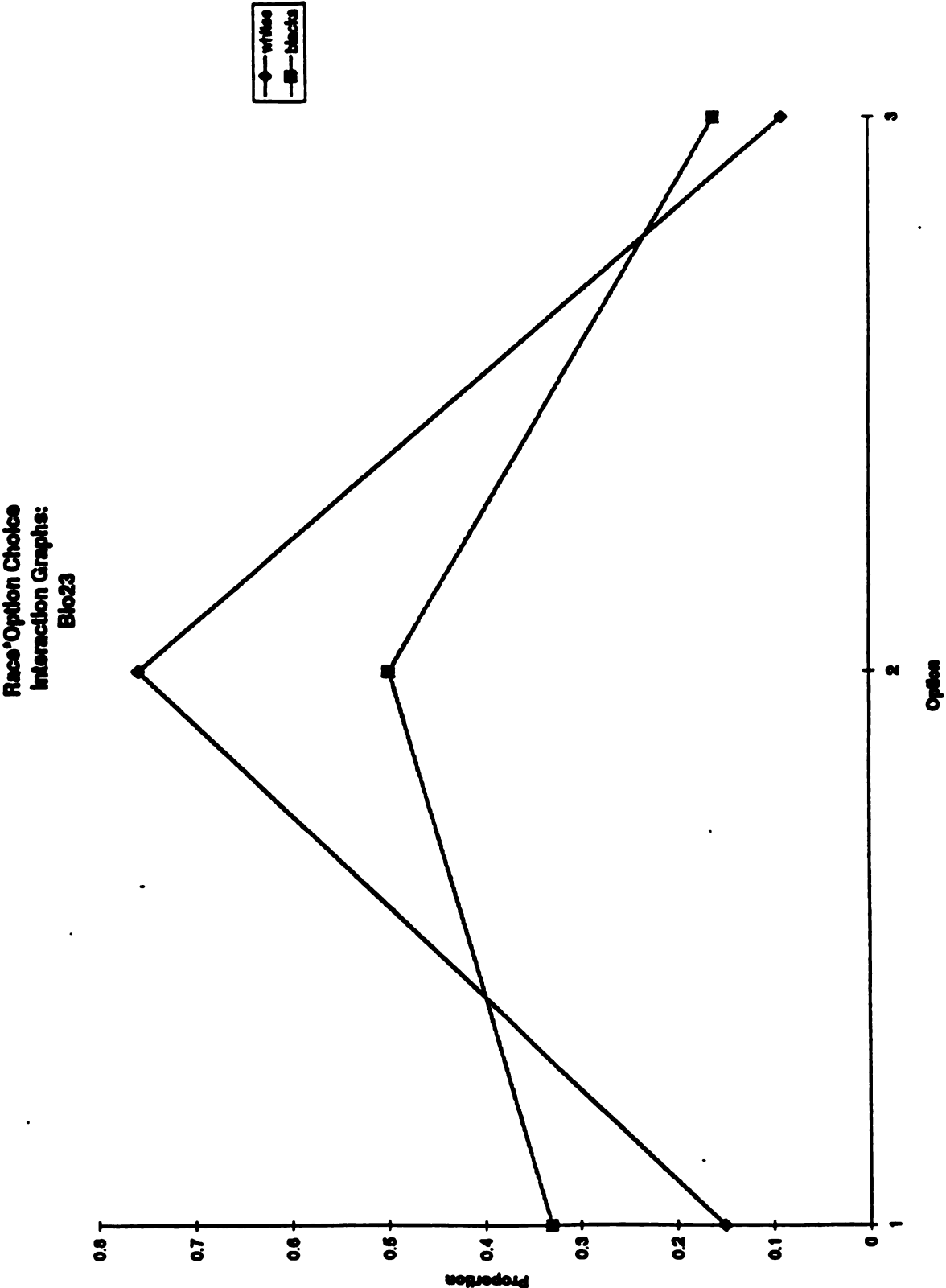
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Interaction Graphs:  
Blo12



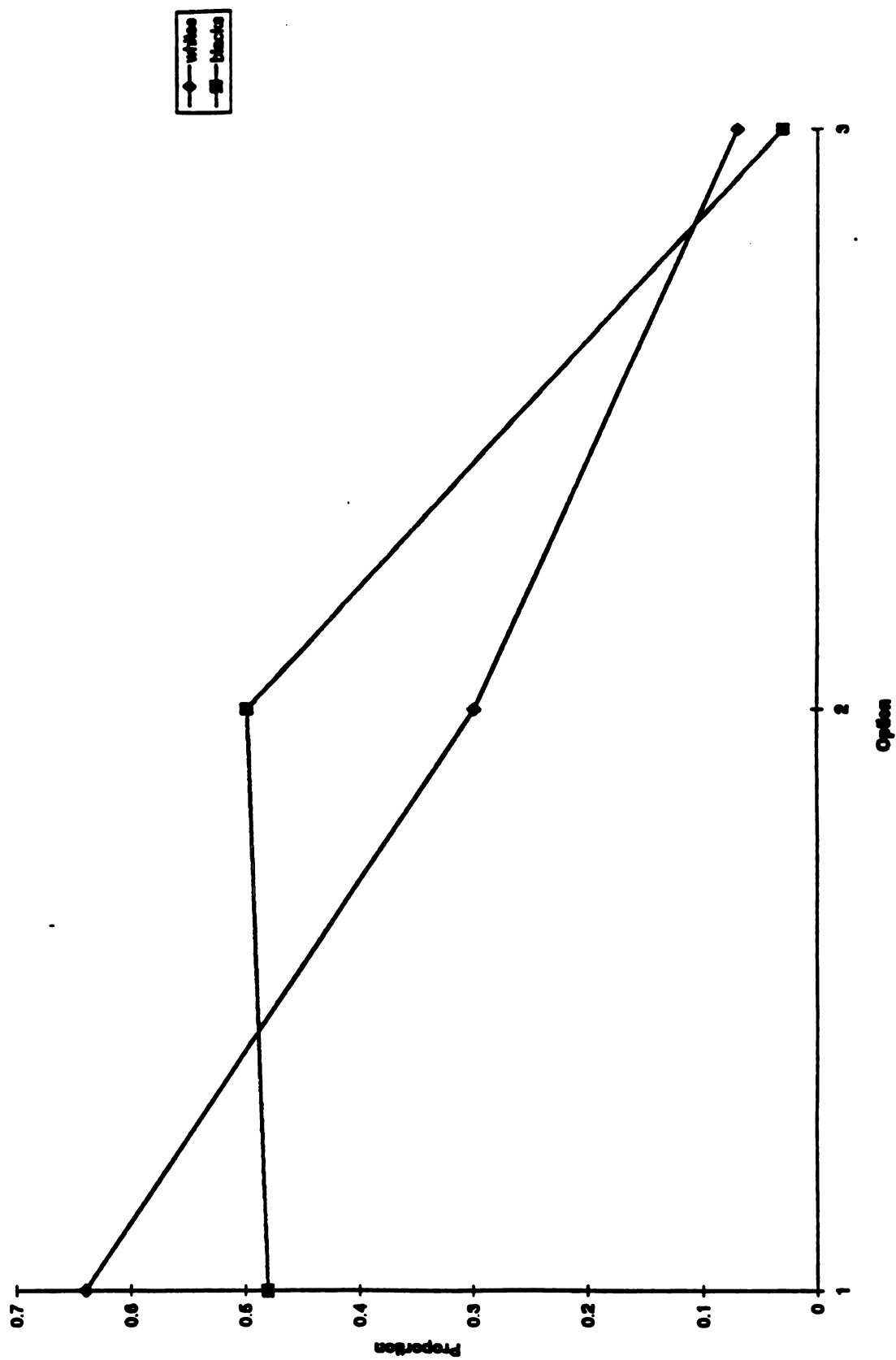
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Bto18

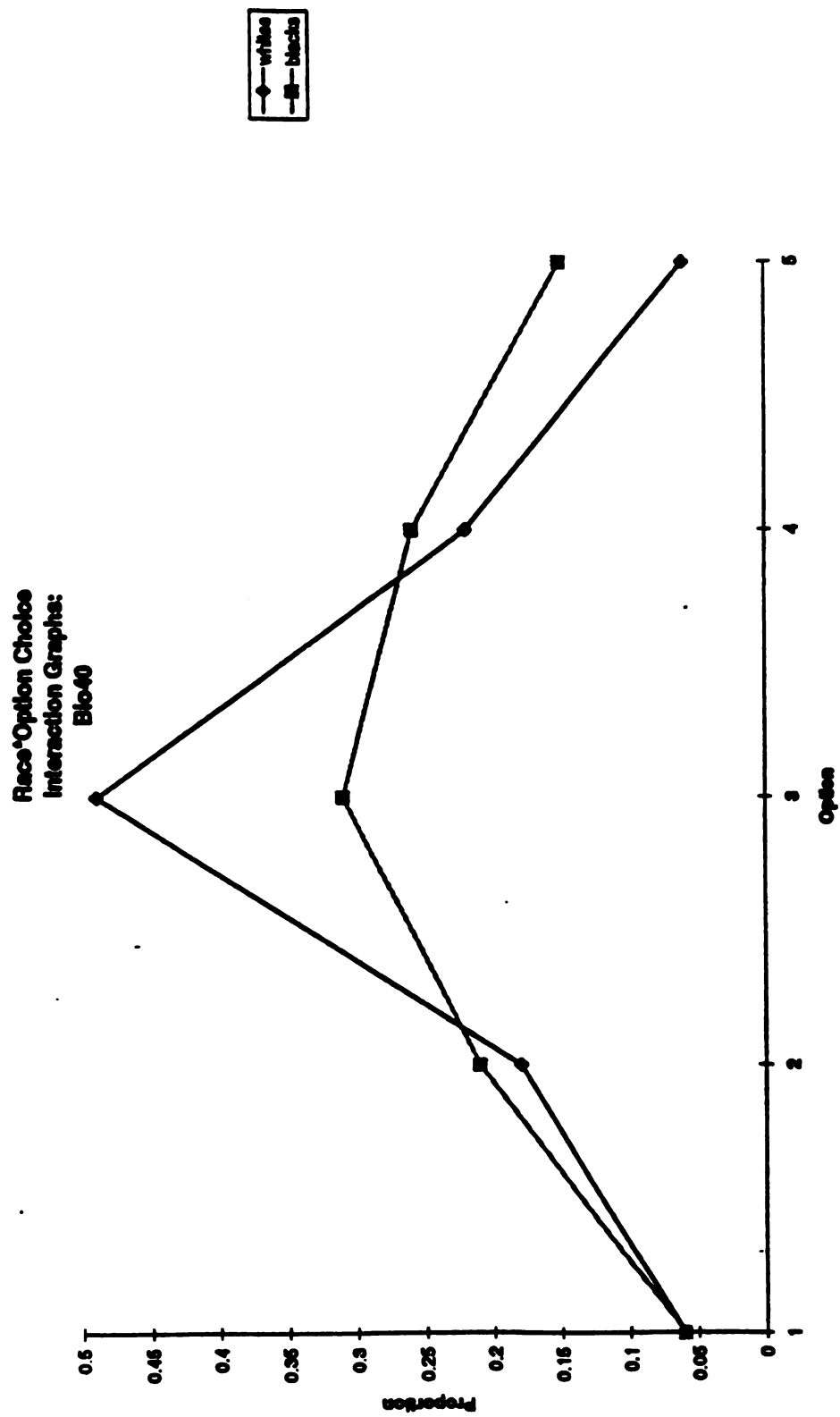


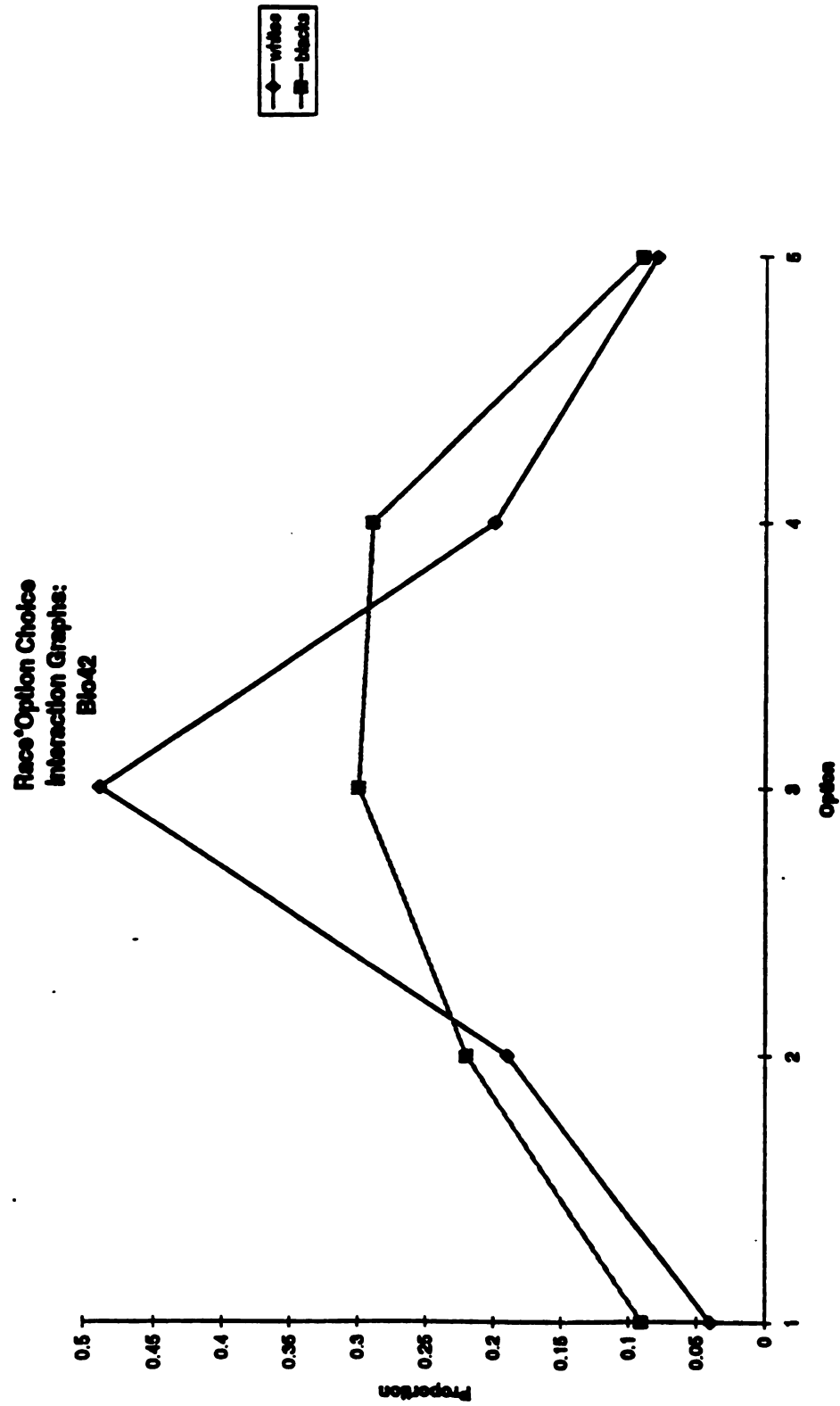


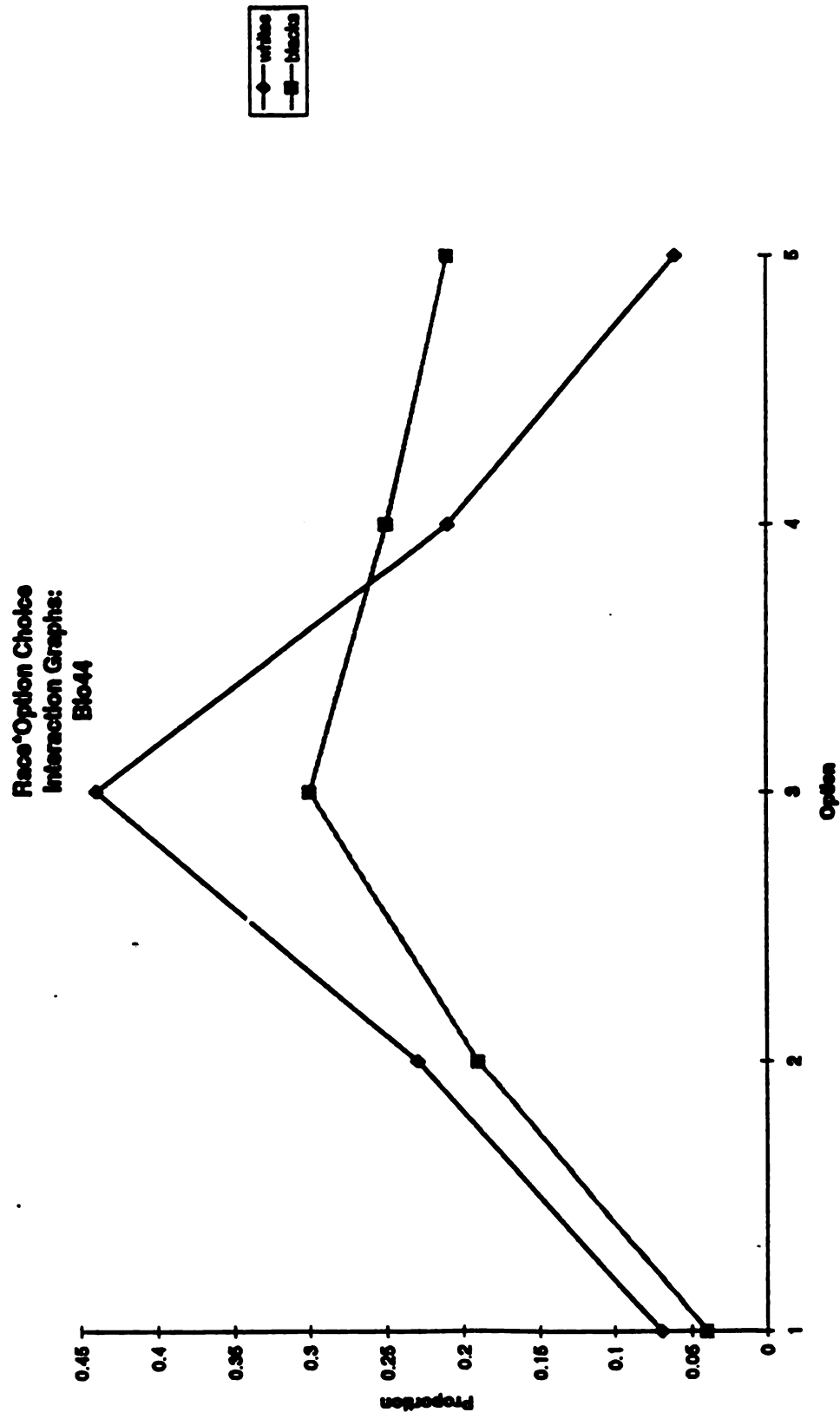


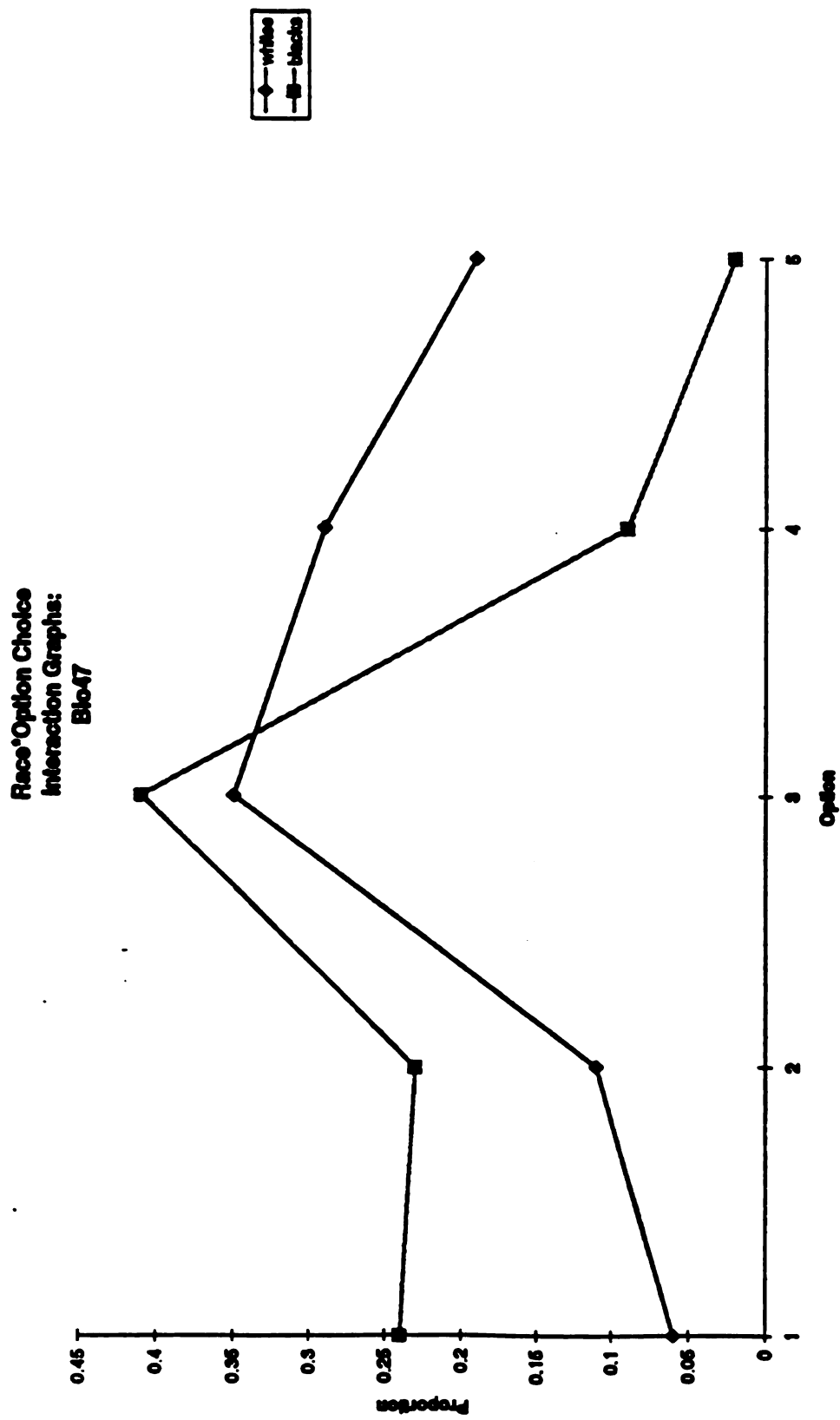
Race\*Option Choice  
Interaction Graphs:  
Blo33



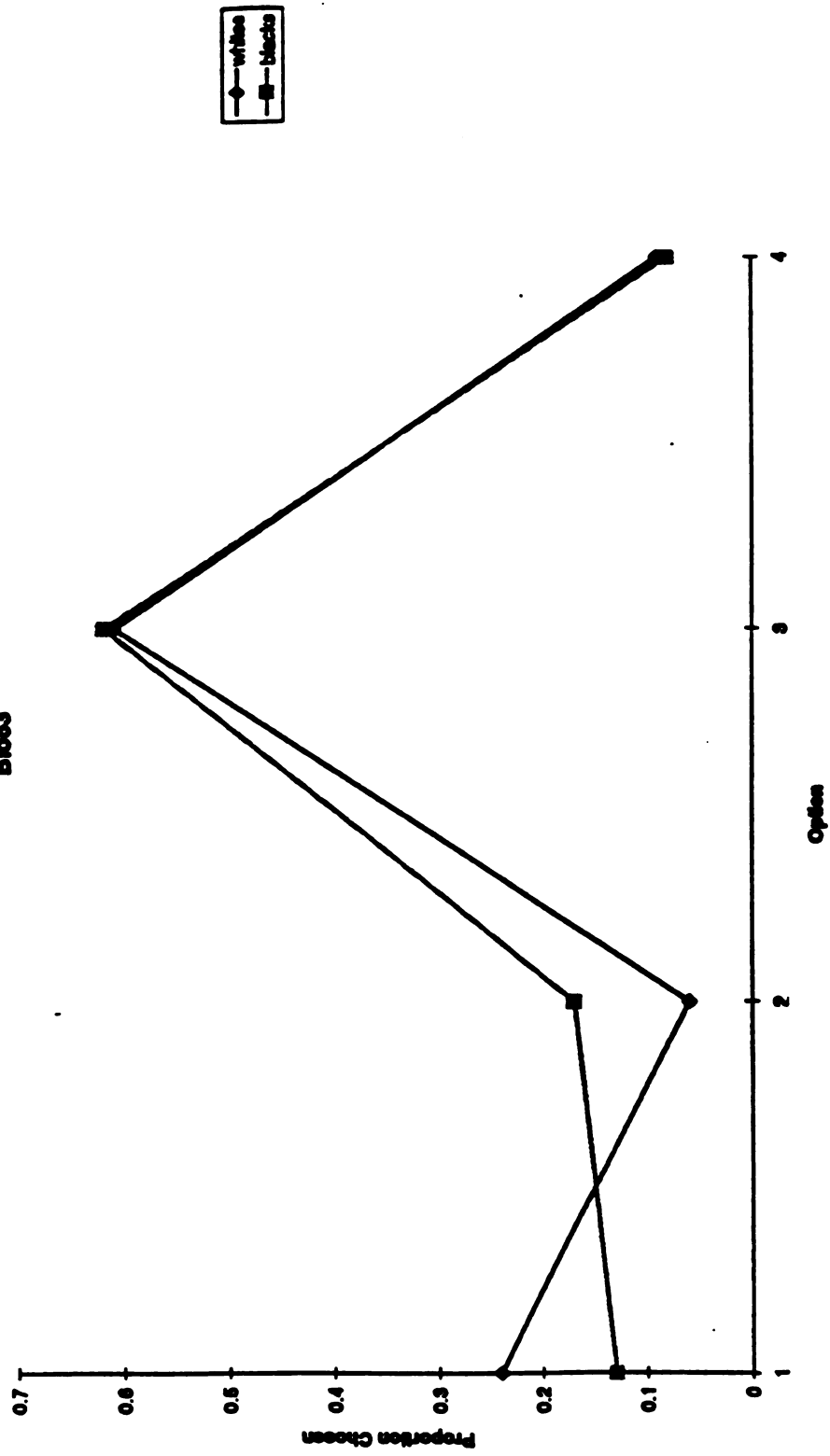




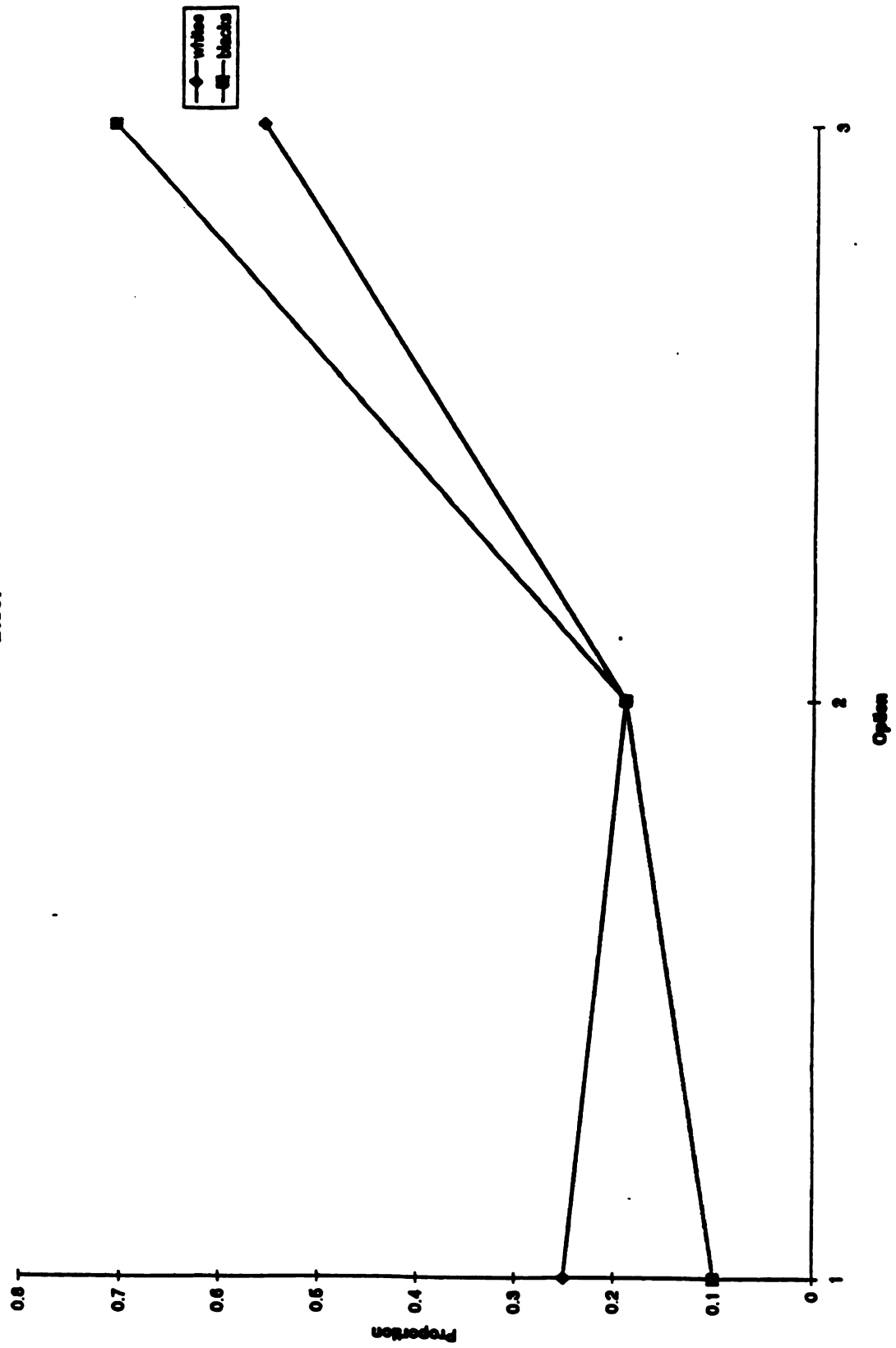




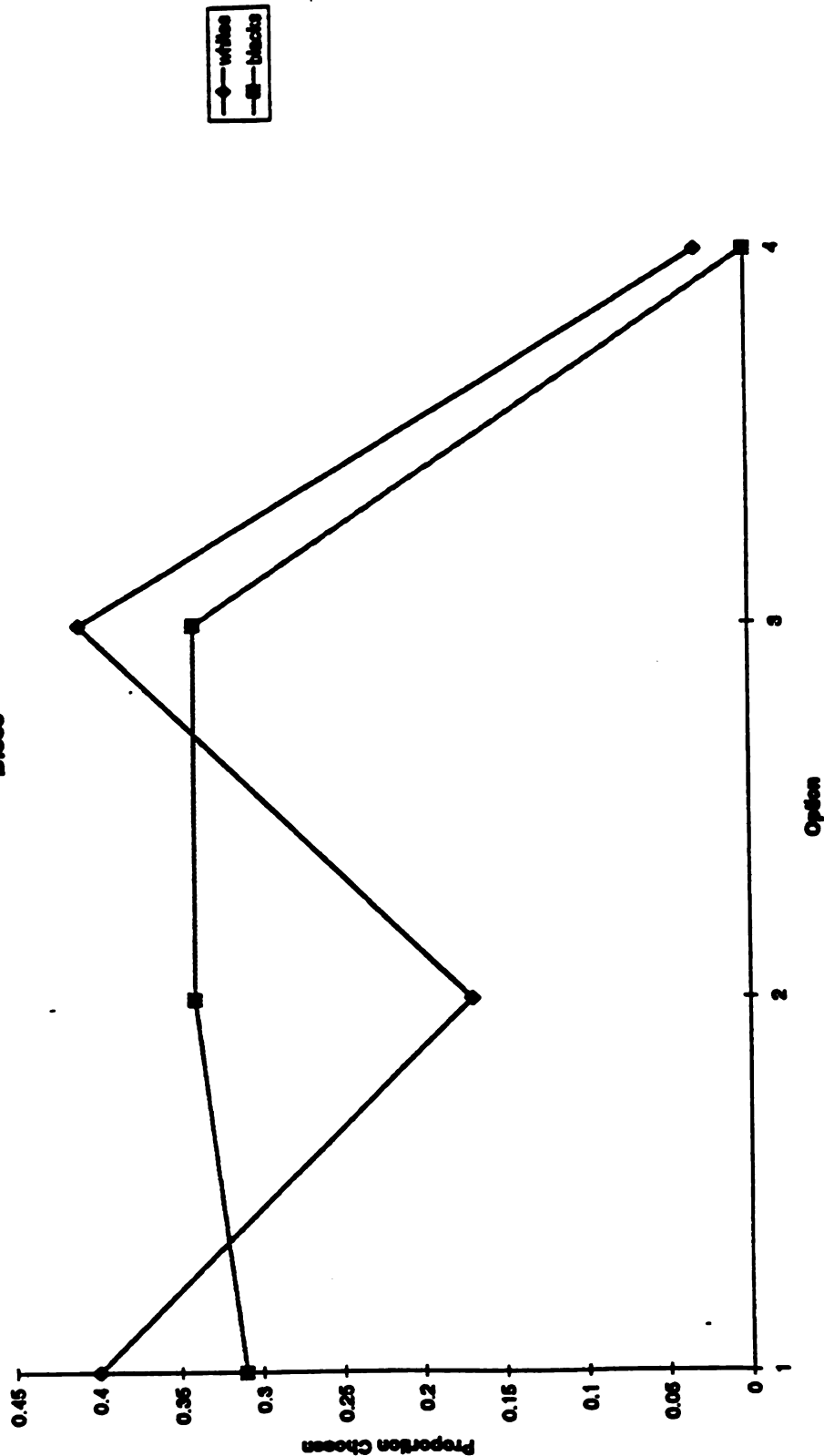
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Interaction Graphs:  
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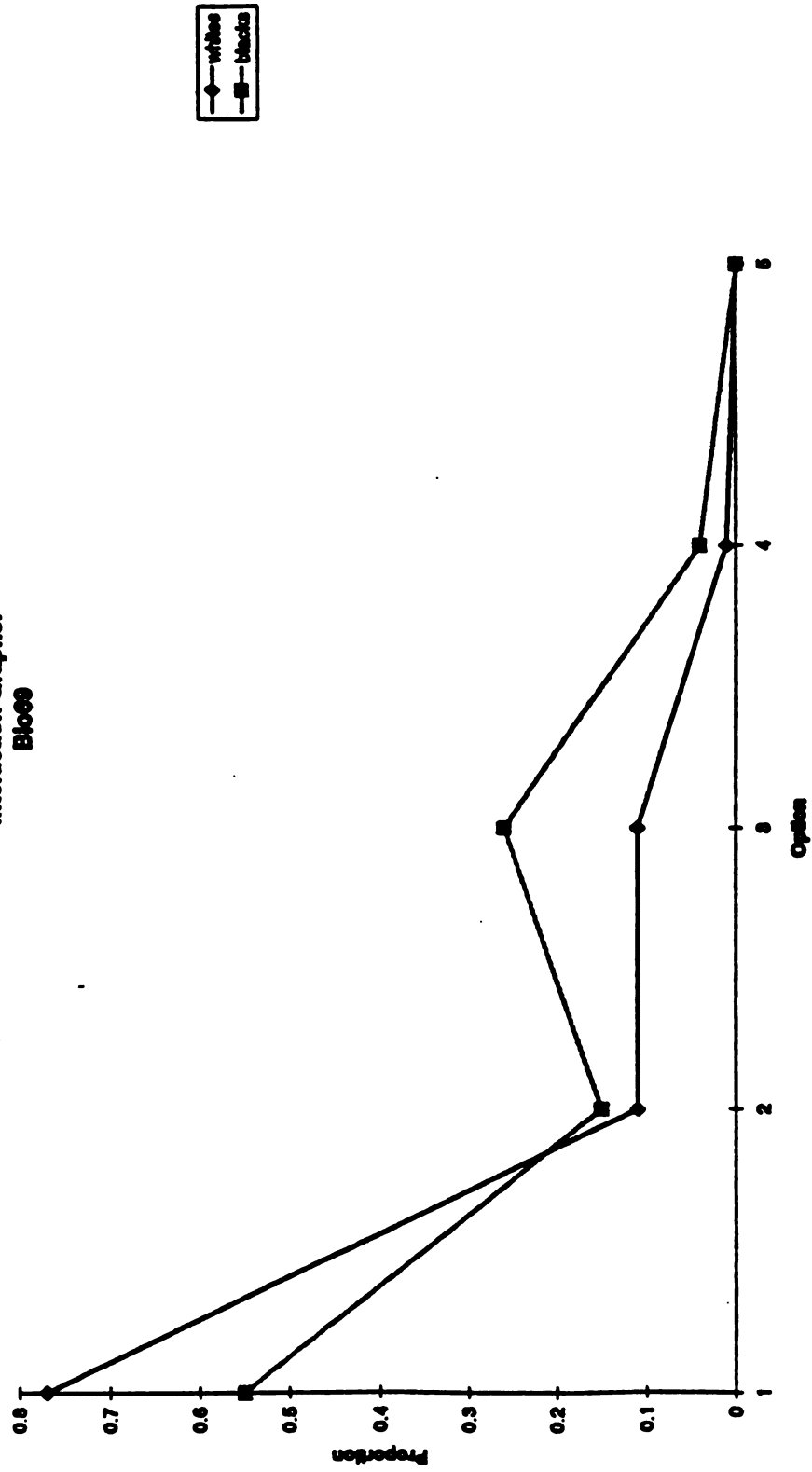
Face\*Option Choice  
Interaction Graphs:  
Bio57

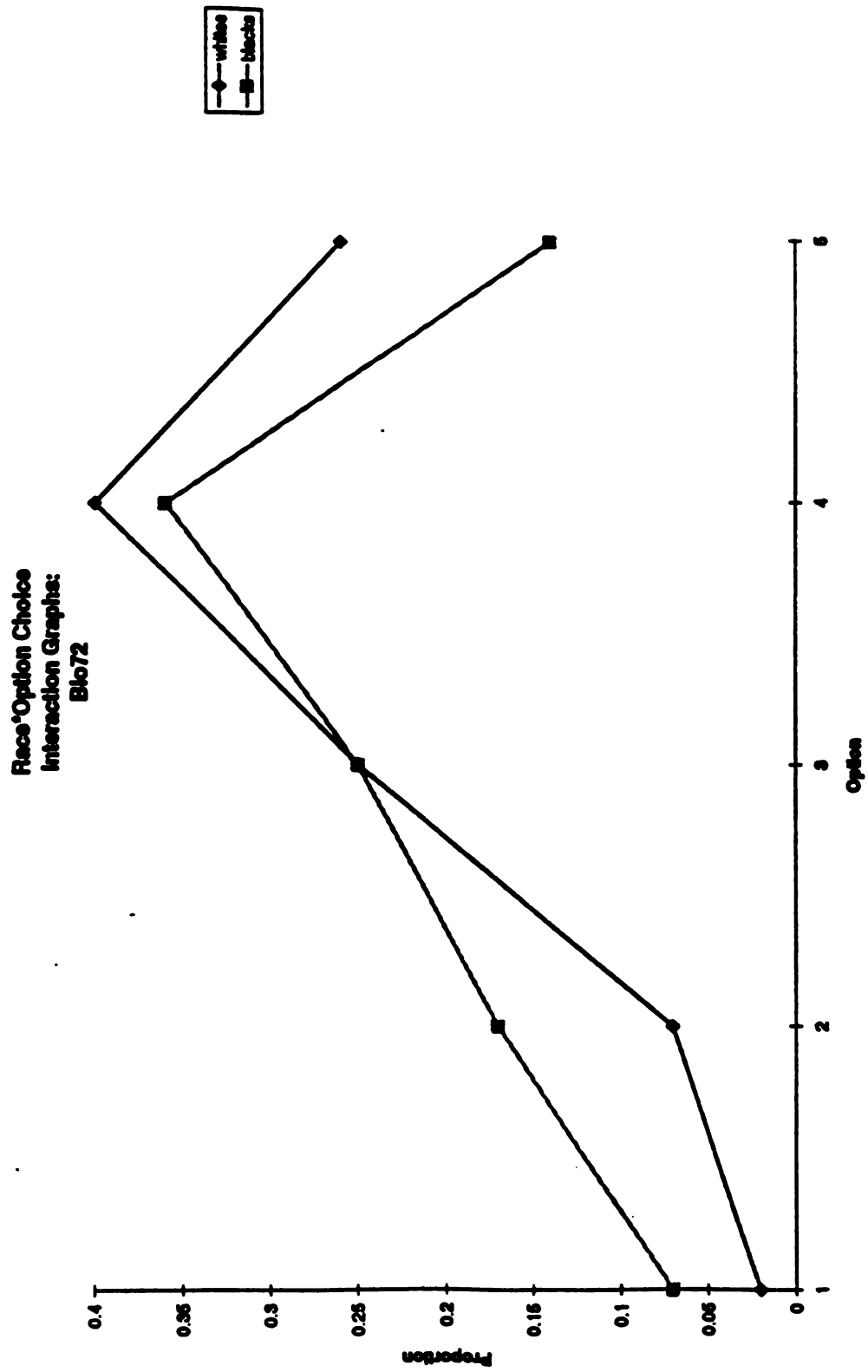


Race\*Option Choice  
Interaction Graphs:  
Blo58

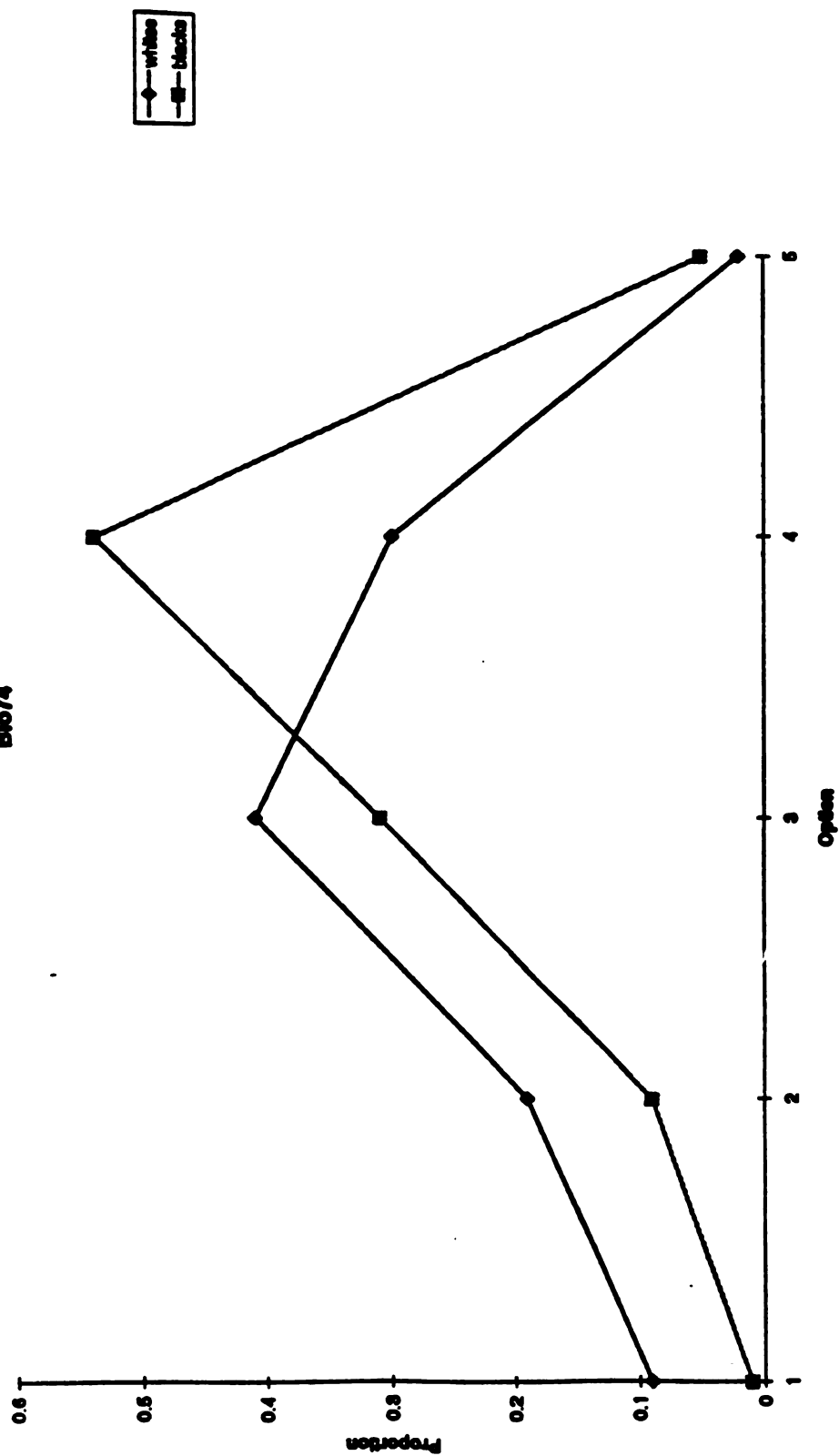


Race\*Option Choice  
Interaction Graphs:  
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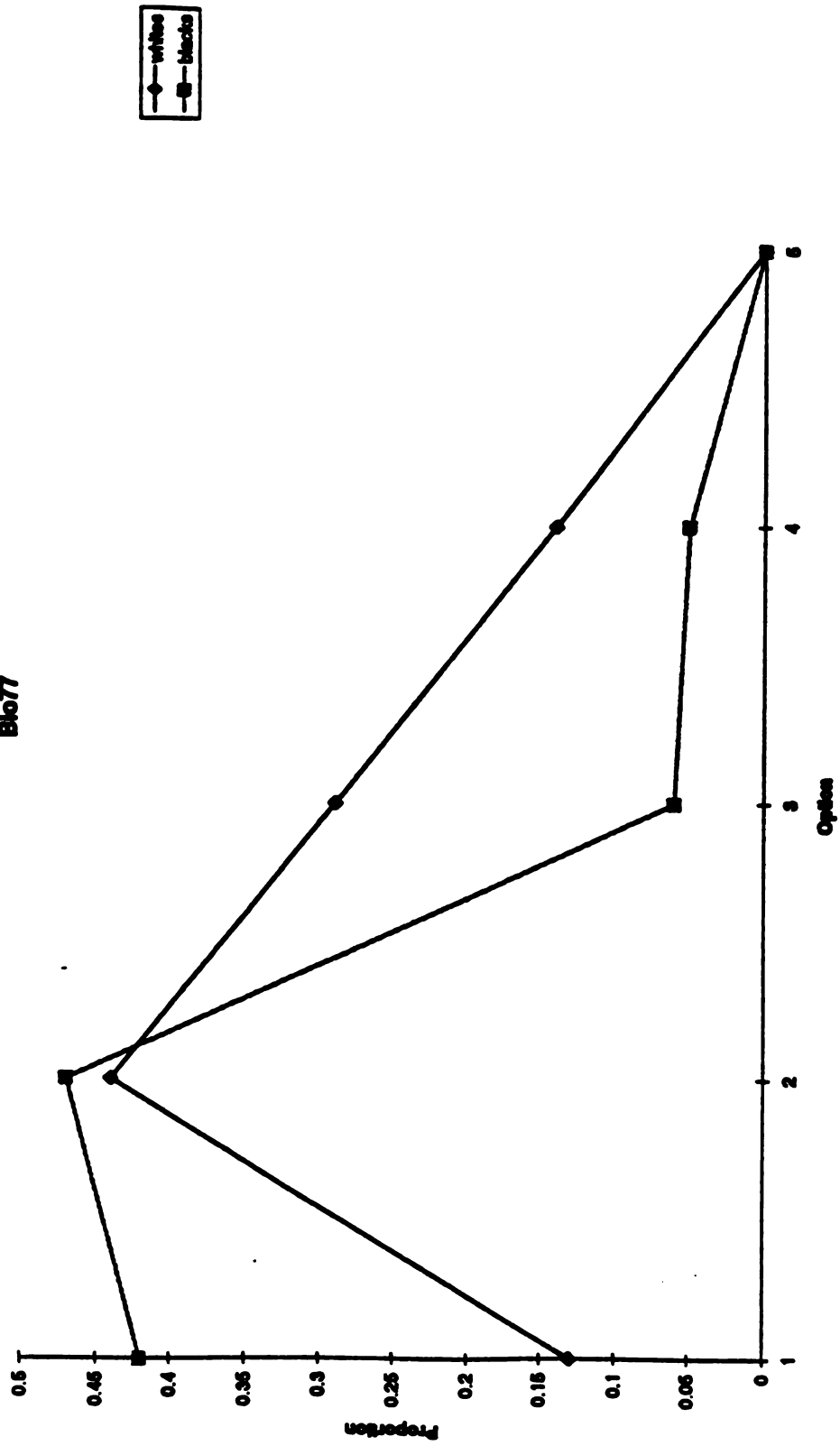




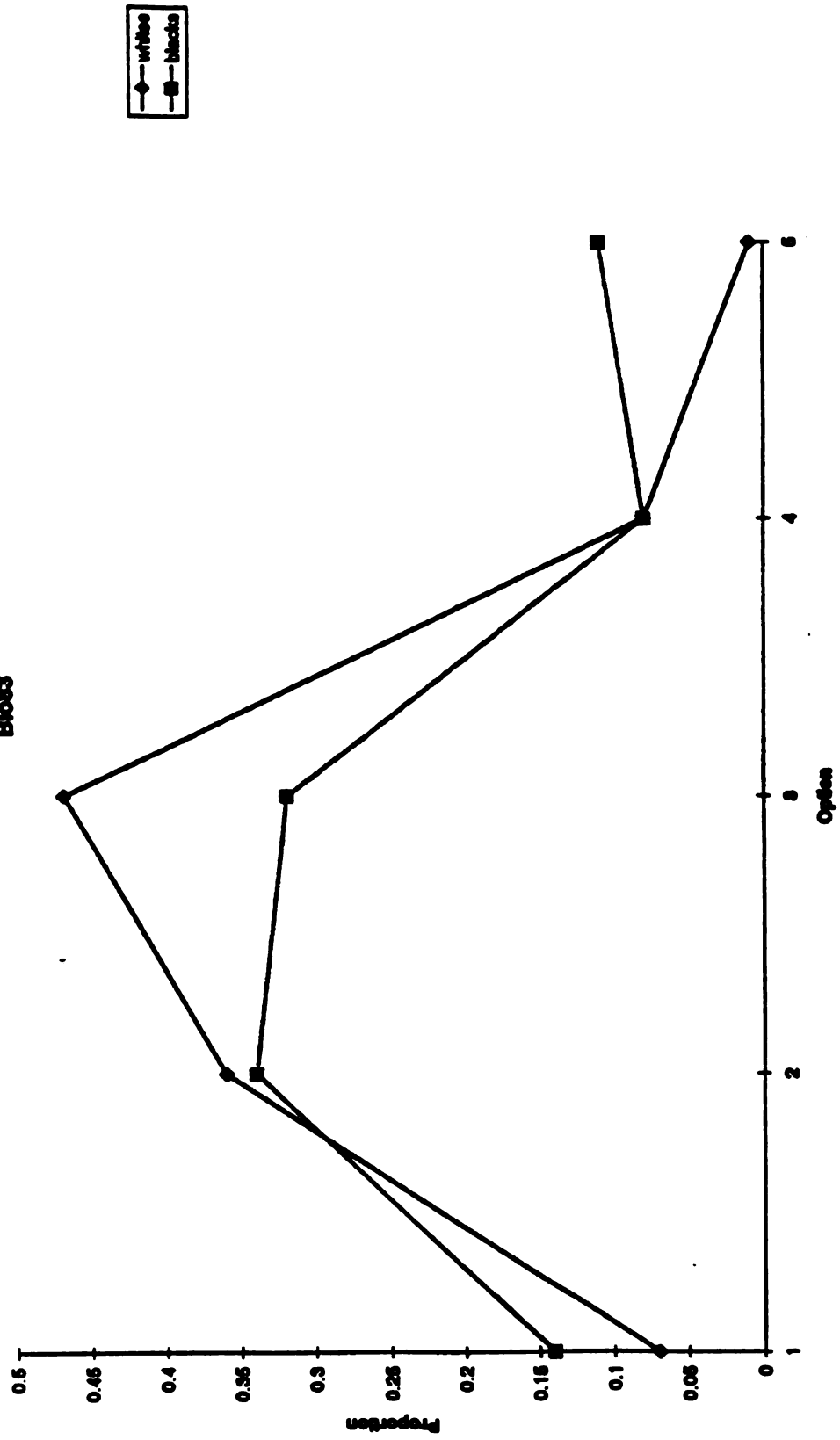
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Interaction Graphs:  
Blo74



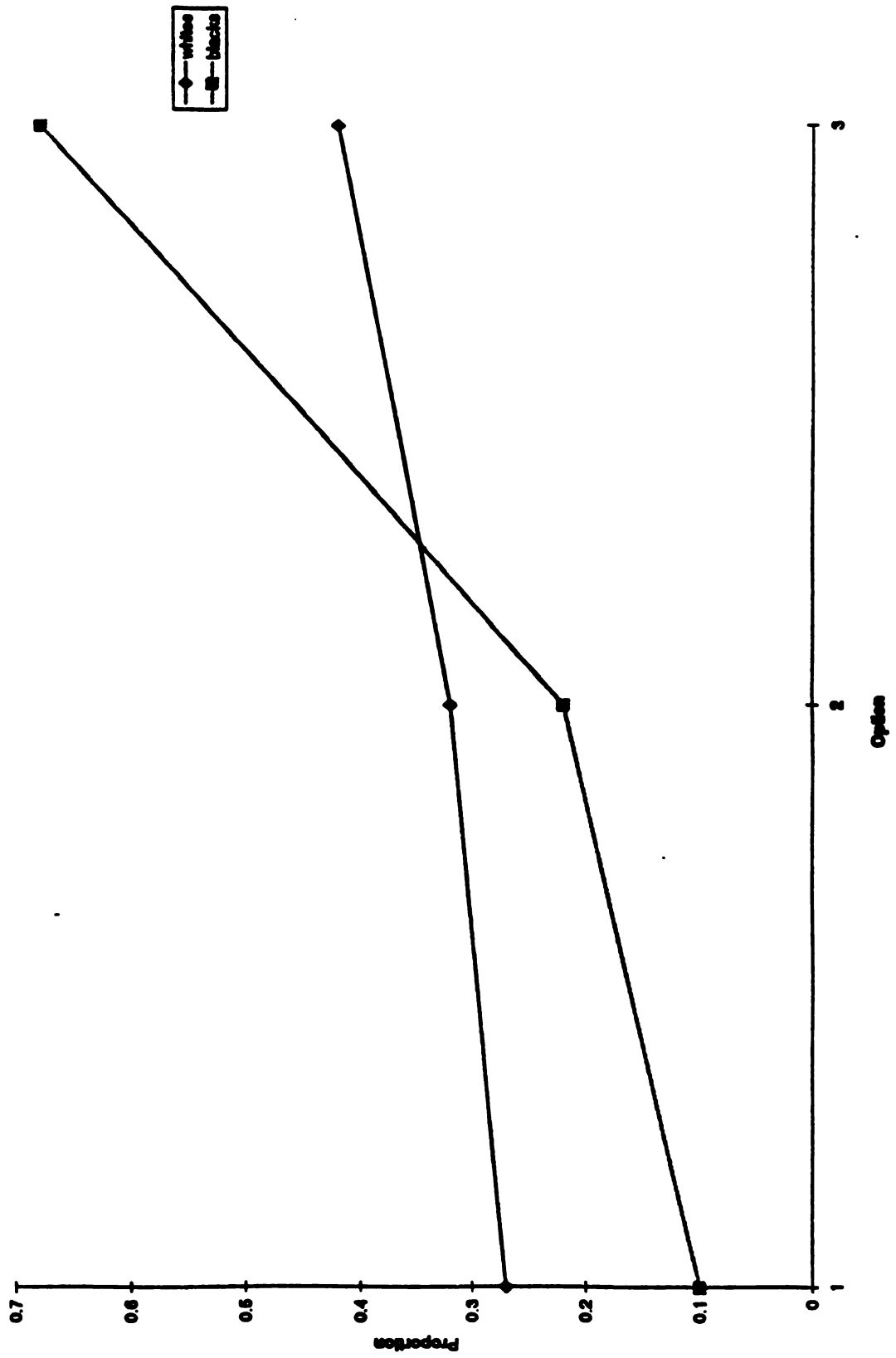
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Interaction Graphs:  
Bto77

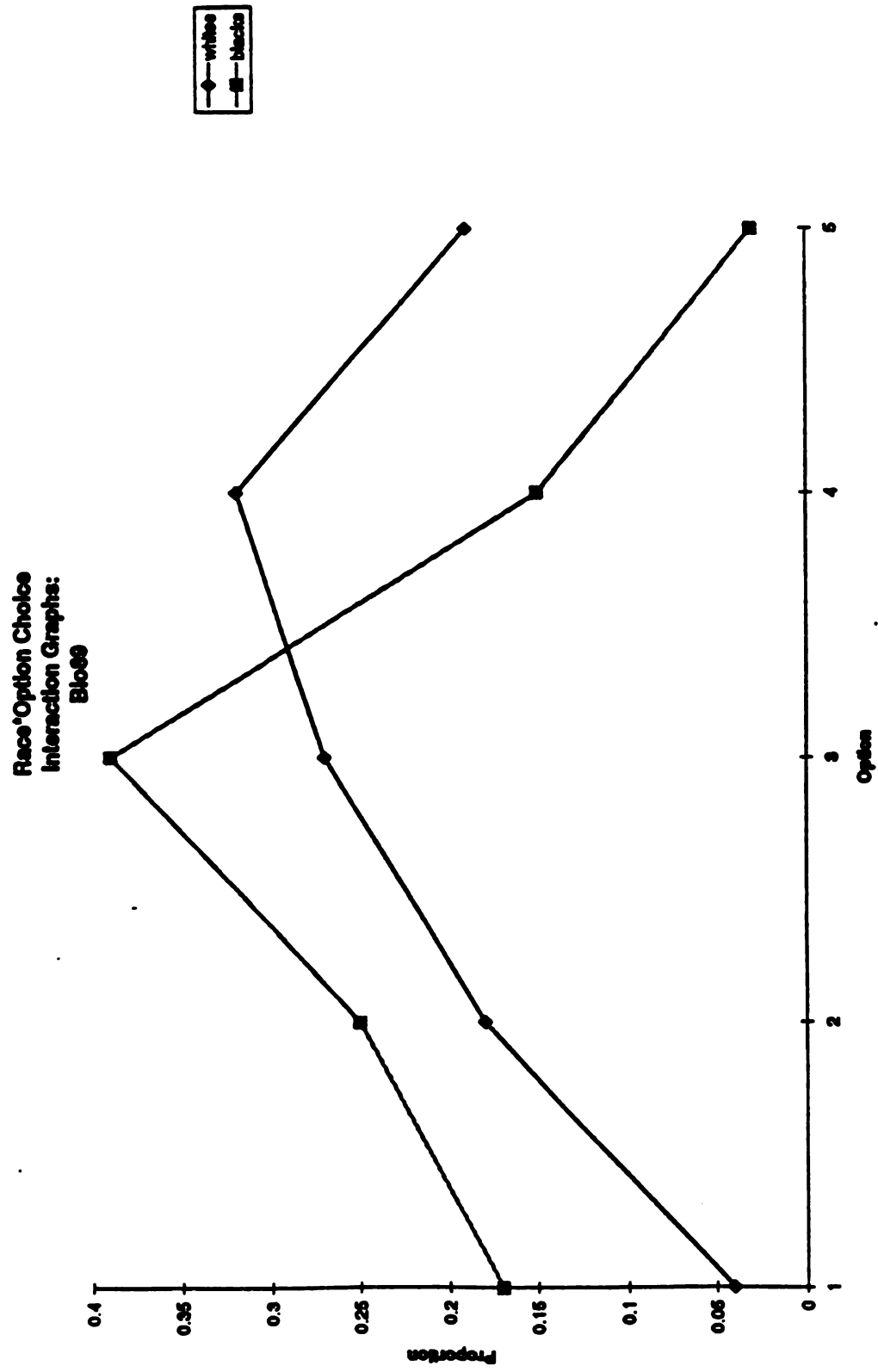


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Interaction Graphs:  
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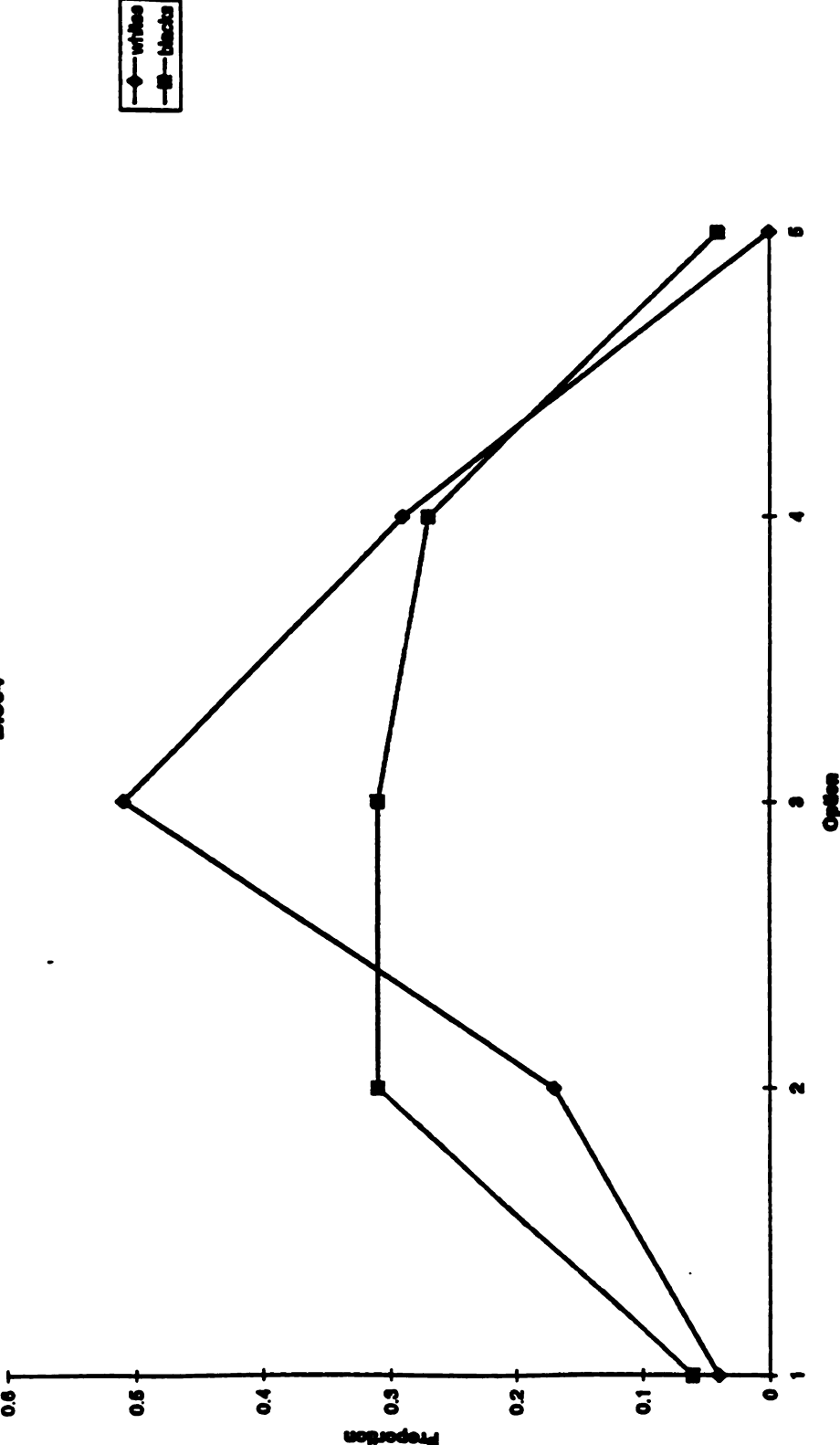


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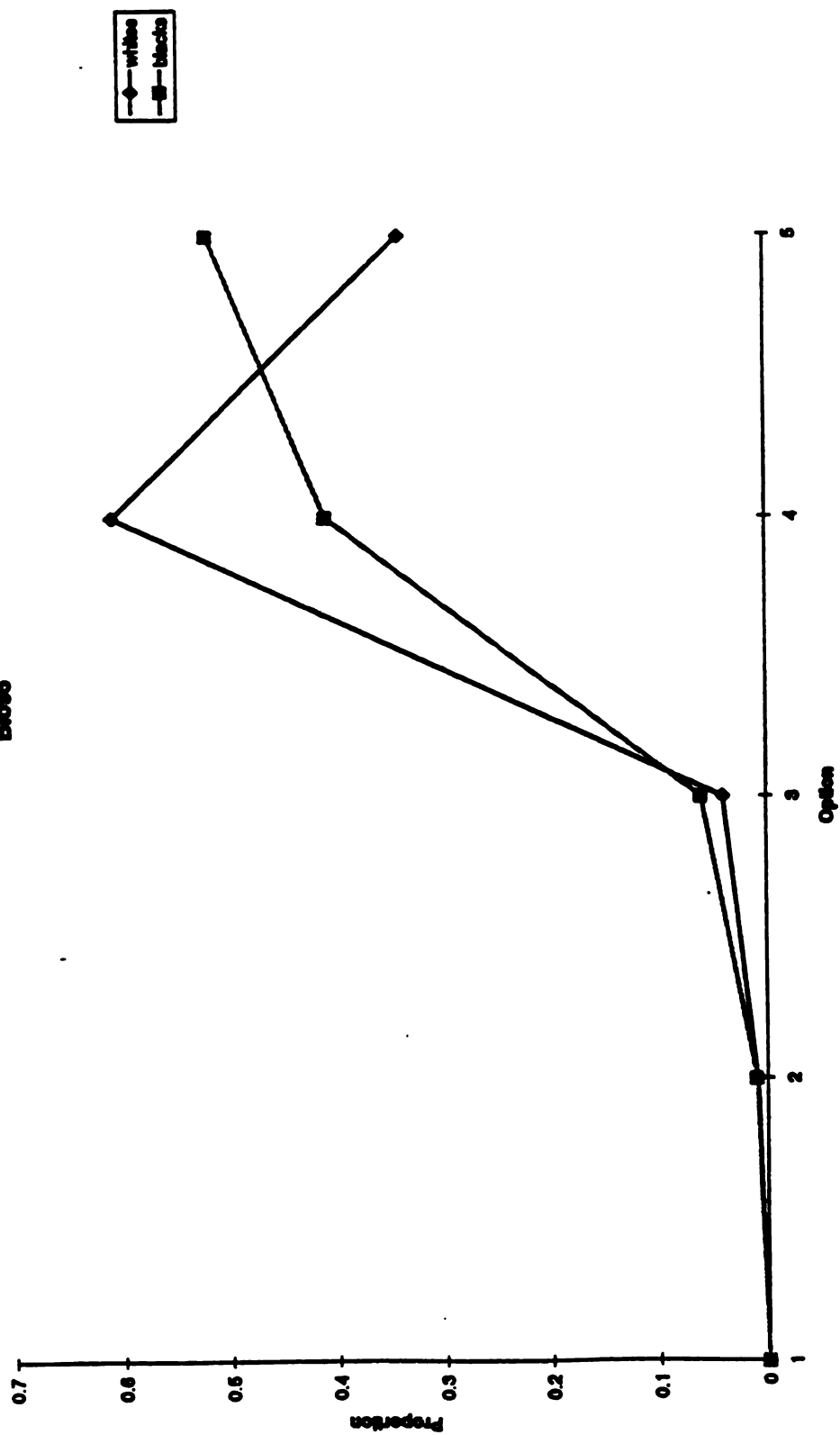




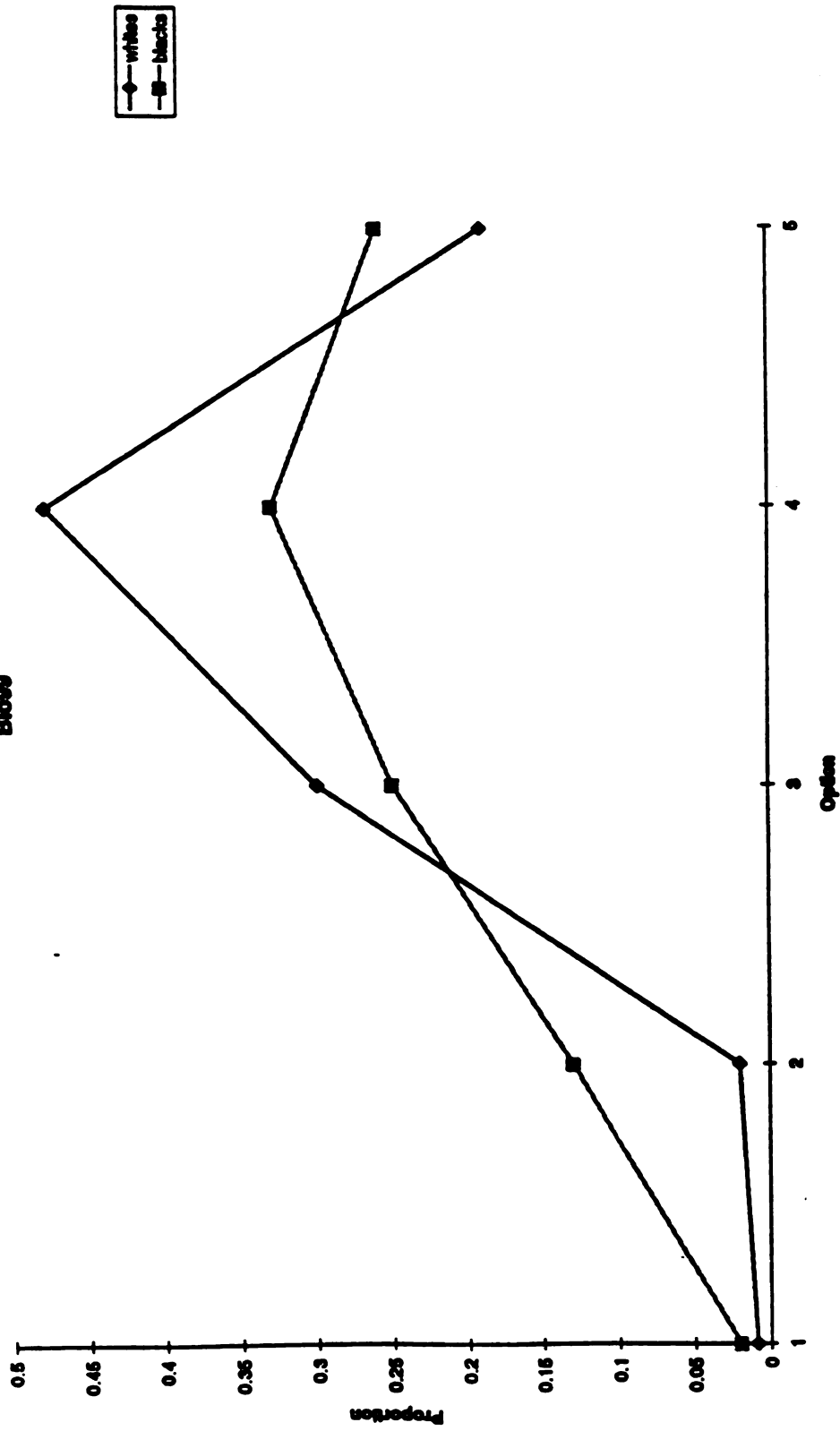
Race\*Option Choice  
Interaction Graphs:  
BIO84

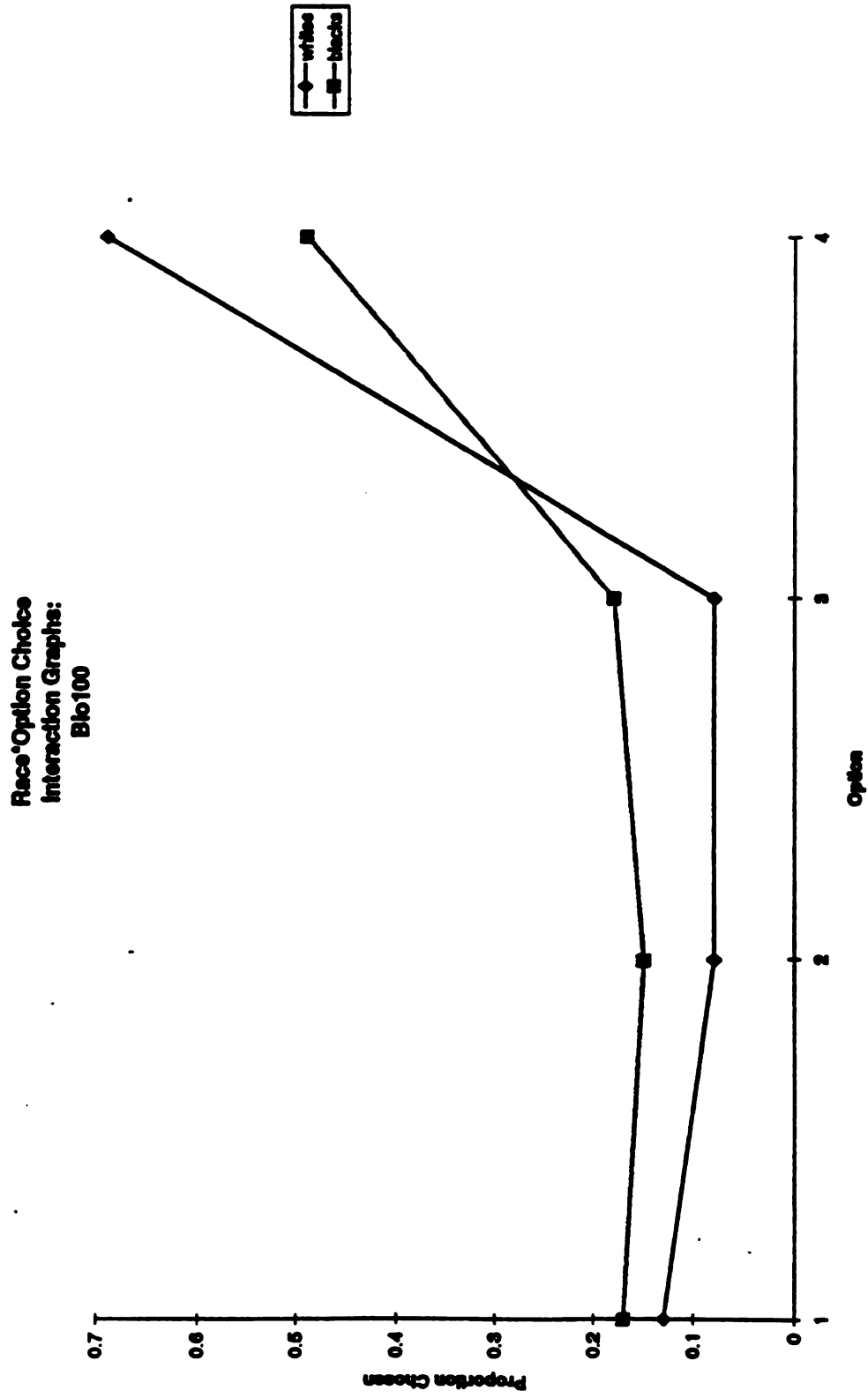


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Interaction Graphs:  
Block

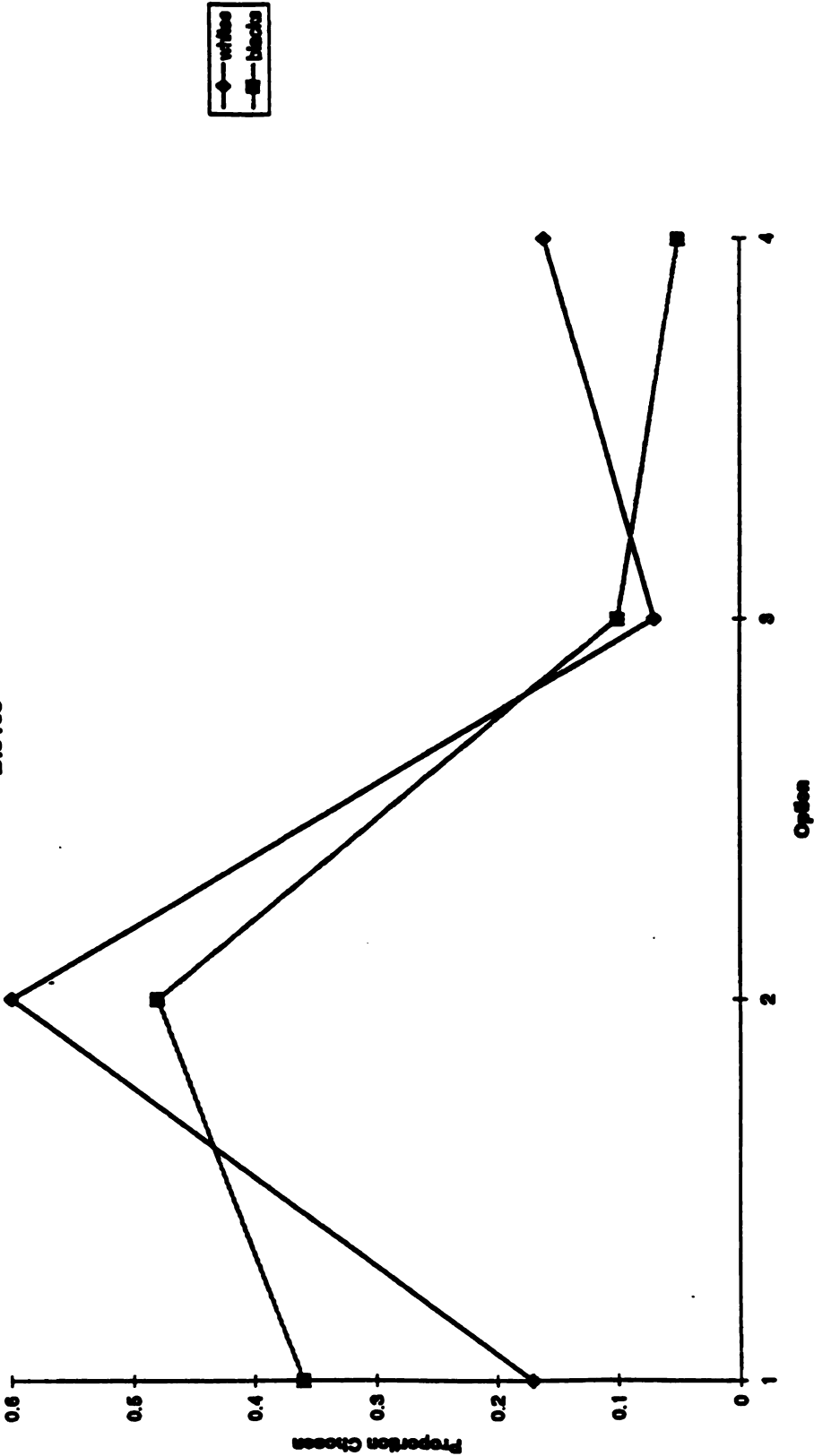


Race\*Option Choice  
Interaction Graphs:  
Elo99

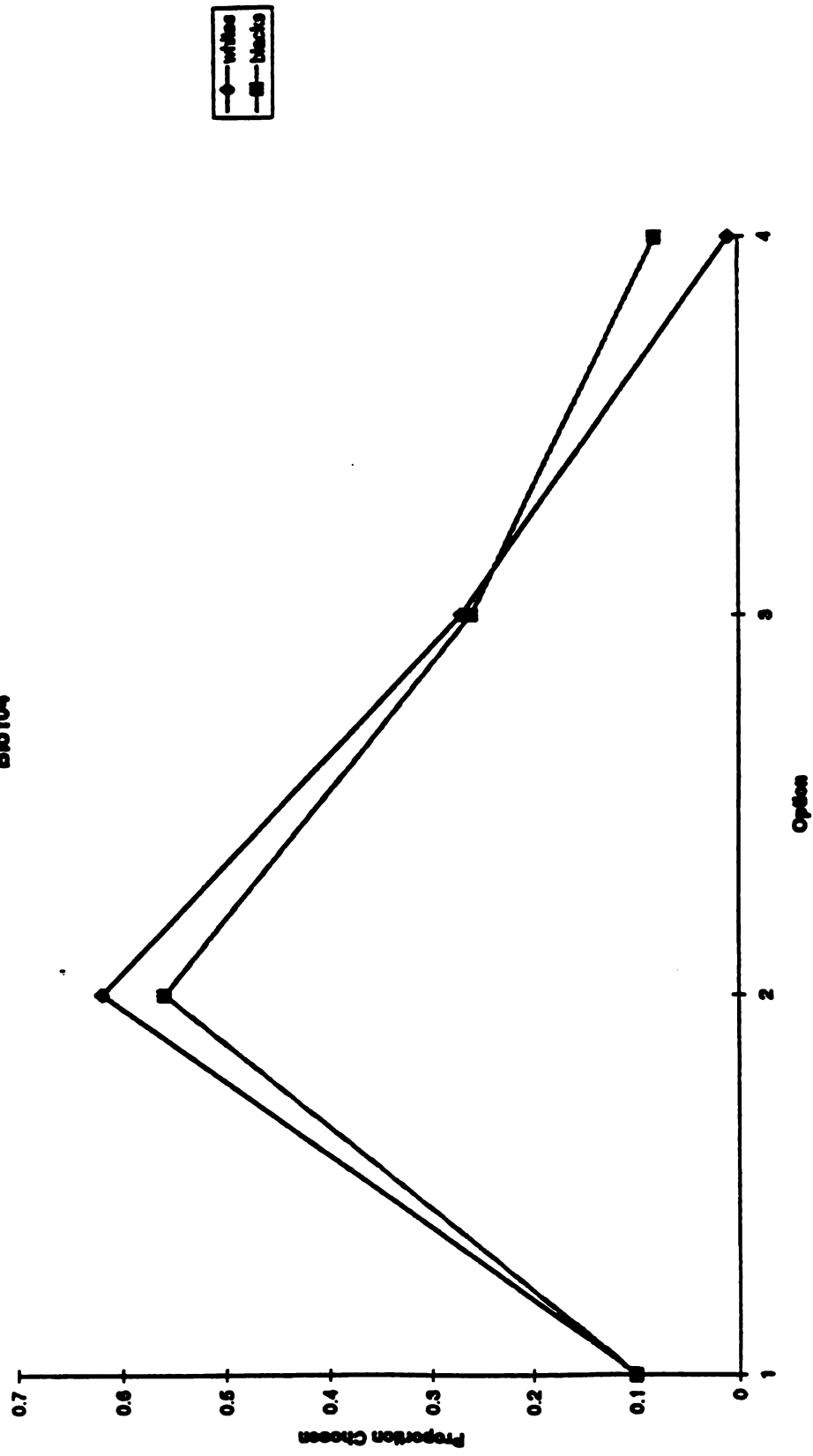




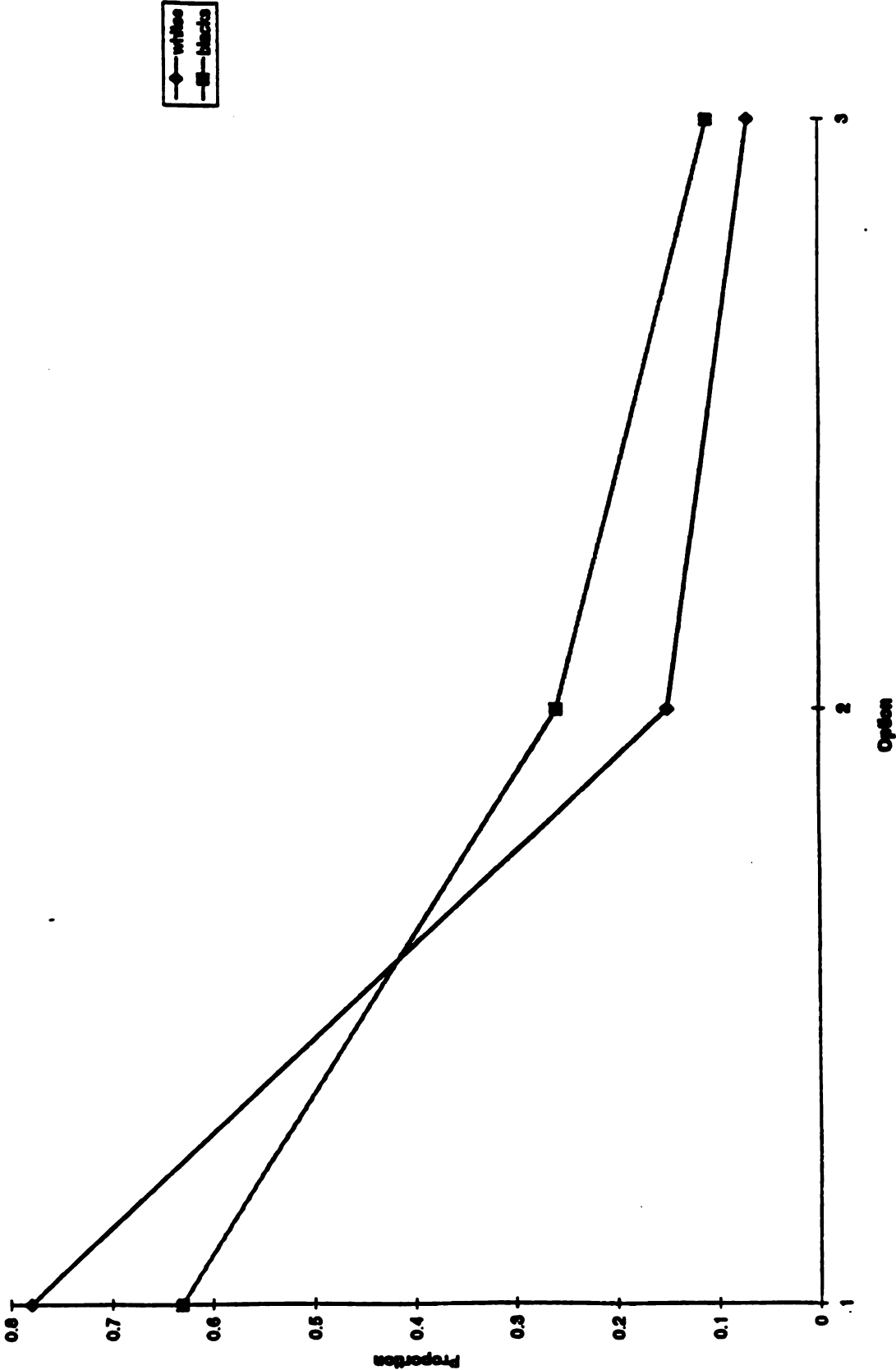
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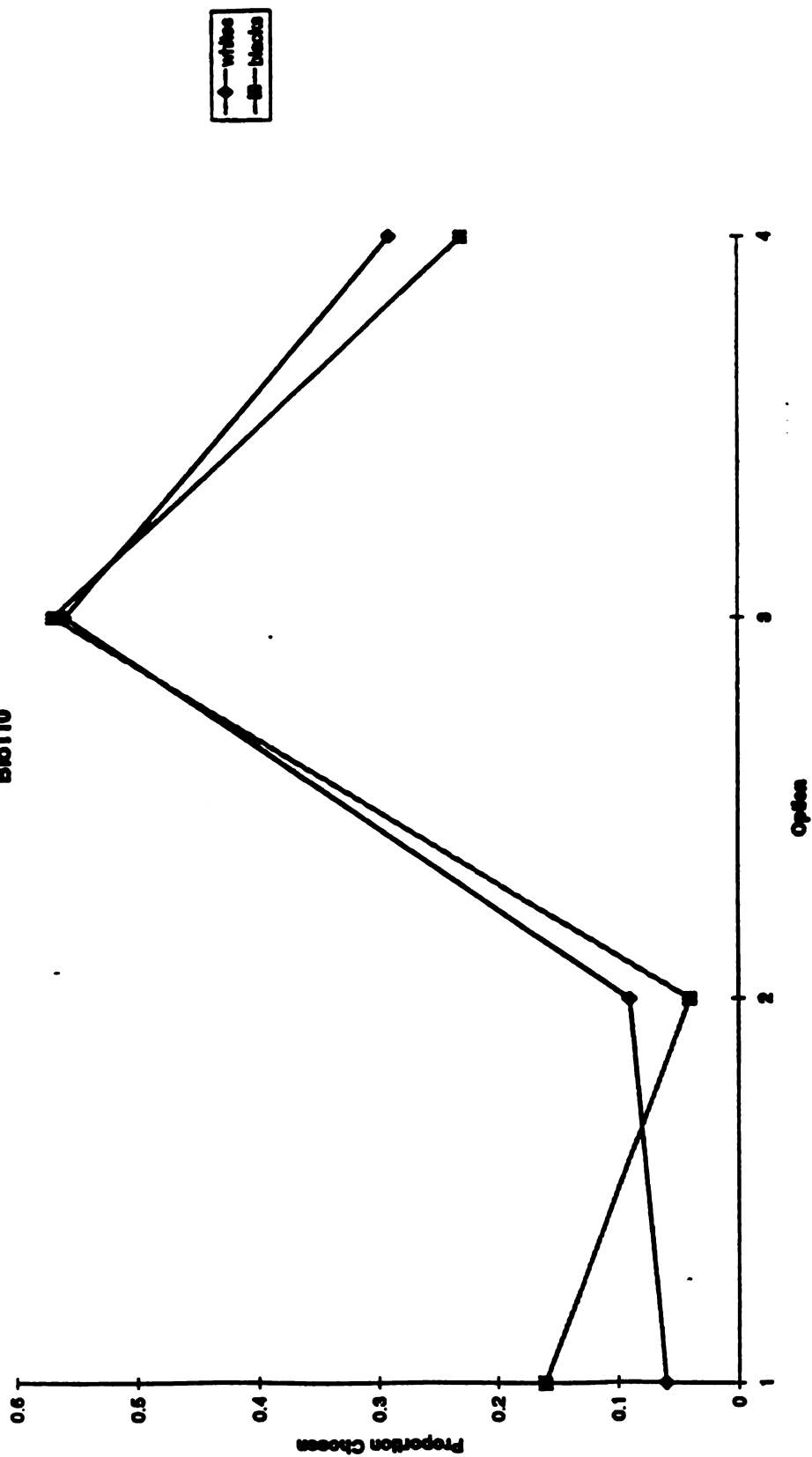
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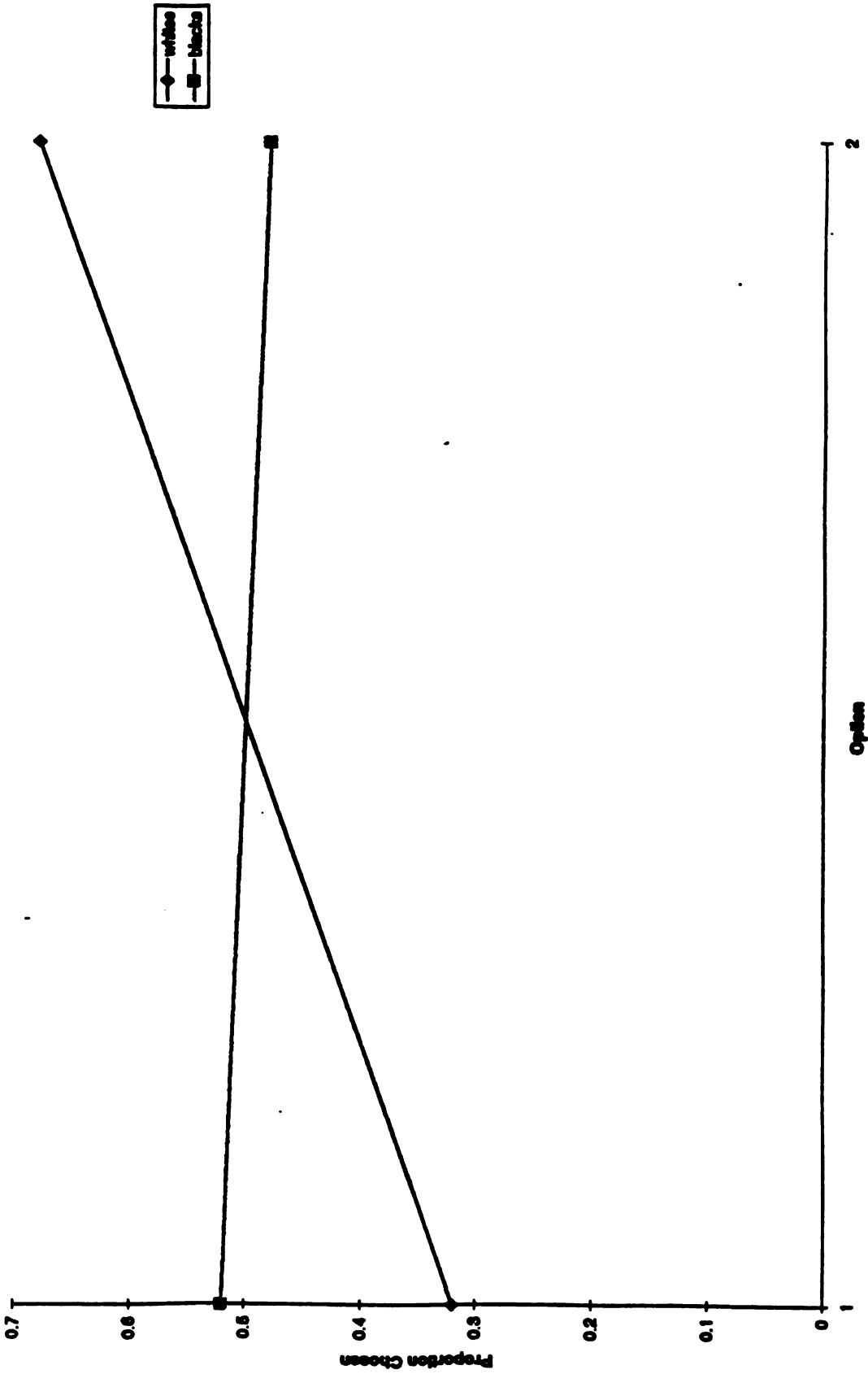
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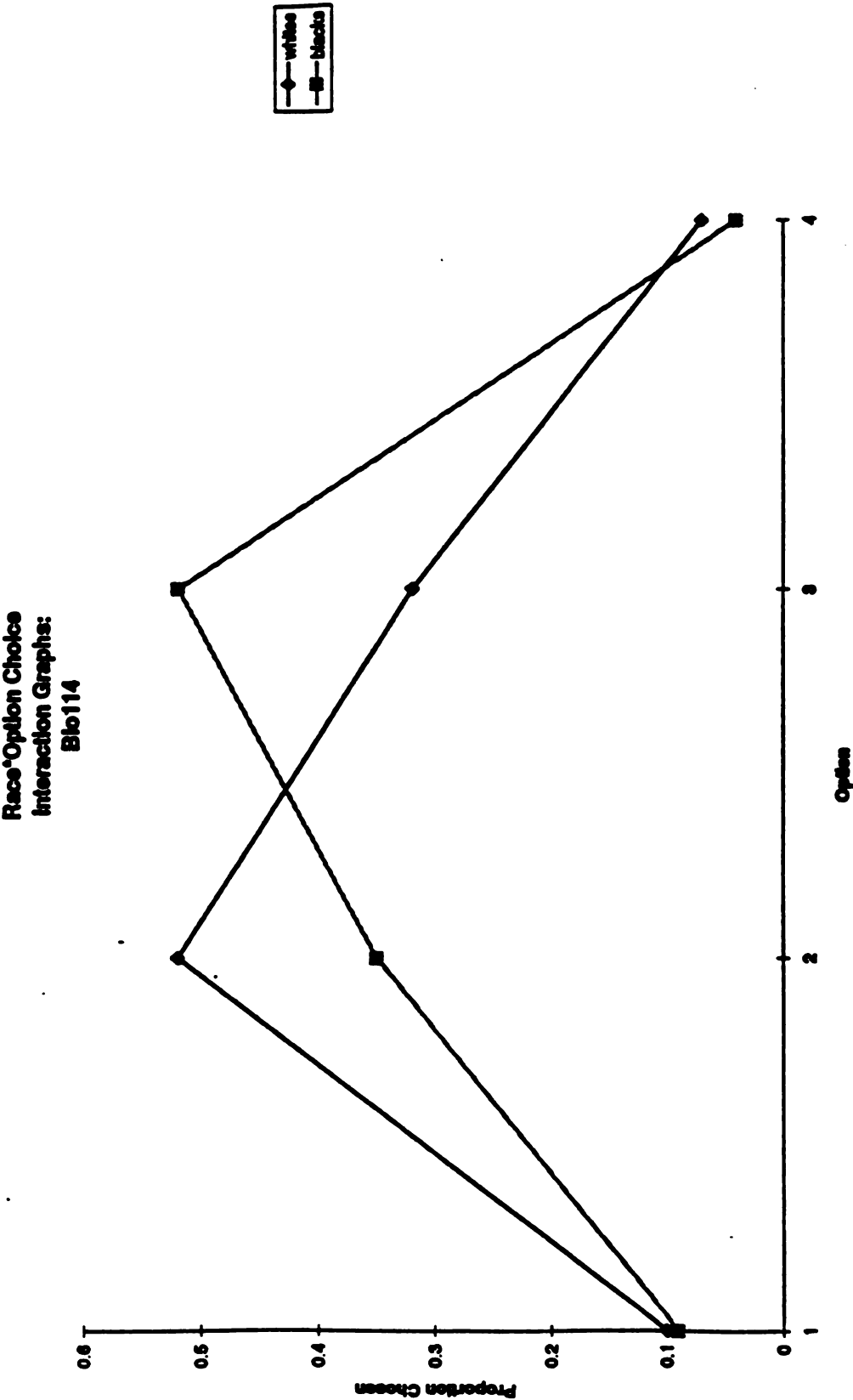


Race\*Option Choice  
Interaction Graphs:  
Blo110



Race\*Option Choice  
Interaction Graphs:  
Blo112





## **LIST OF REFERENCES**

## LIST OF REFERENCES

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