

FIGURE H-1-40. MCM Schizotypal Score versus Dioxin

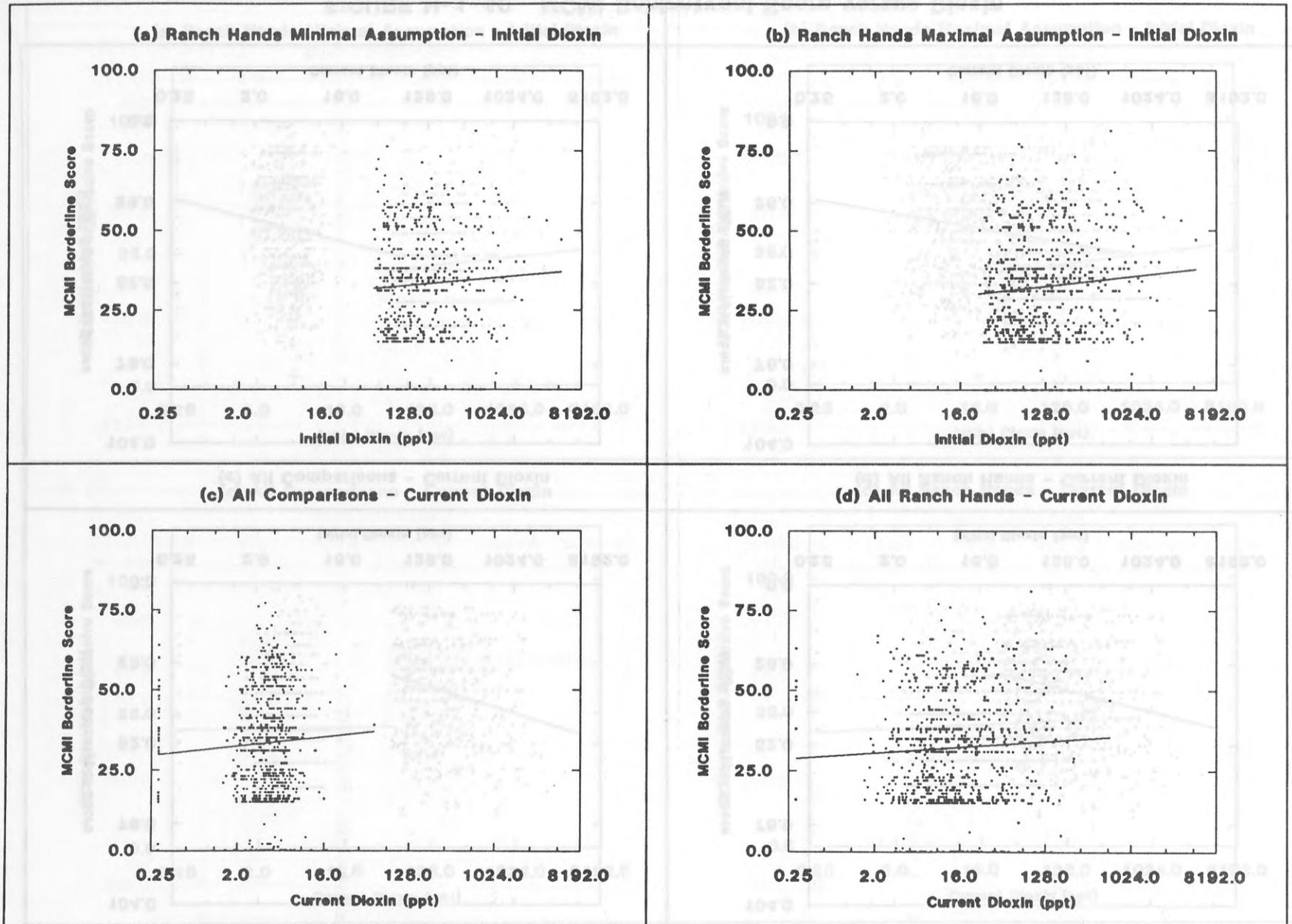
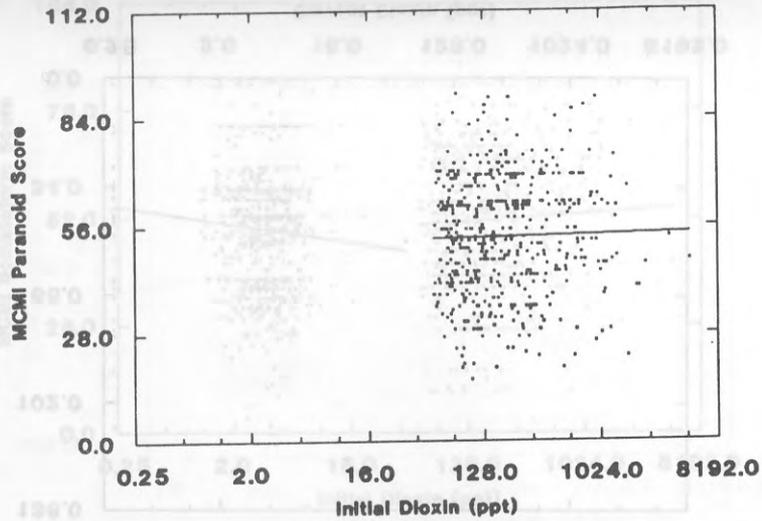
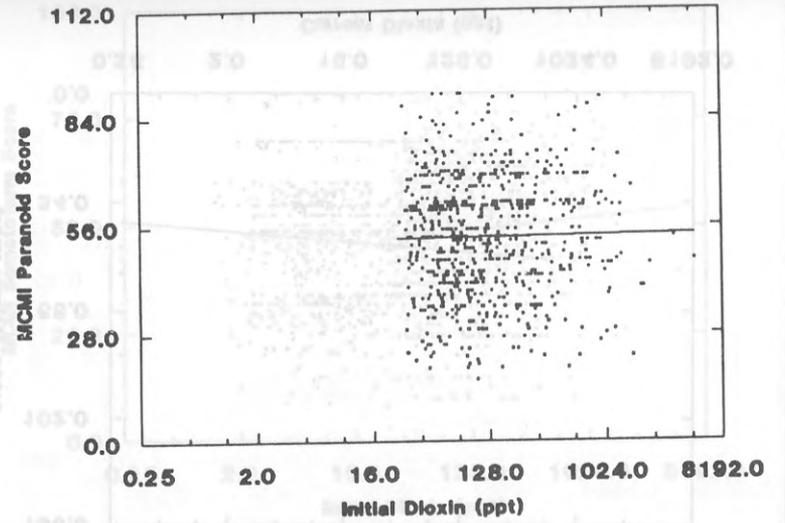


FIGURE H-1-41. MCMC Borderline Score versus Dioxin

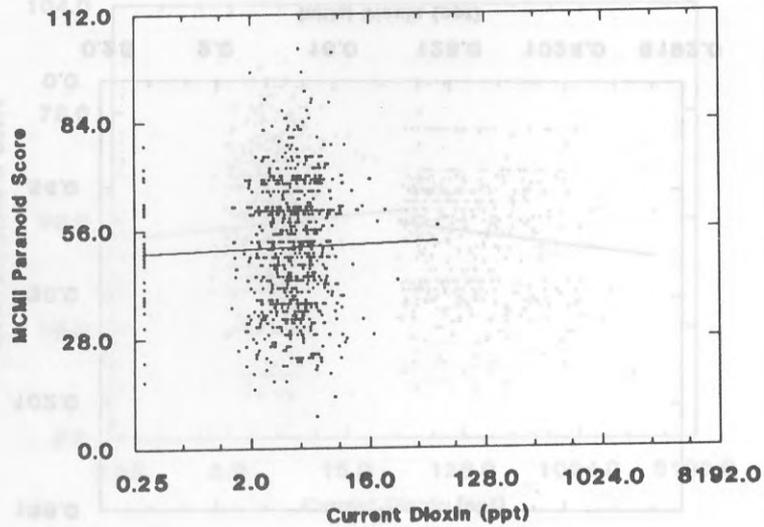
(a) Ranch Hands Minimal Assumption - Initial Dioxin



(b) Ranch Hands Maximal Assumption - Initial Dioxin



(c) All Comparisons - Current Dioxin



(d) All Ranch Hands - Current Dioxin

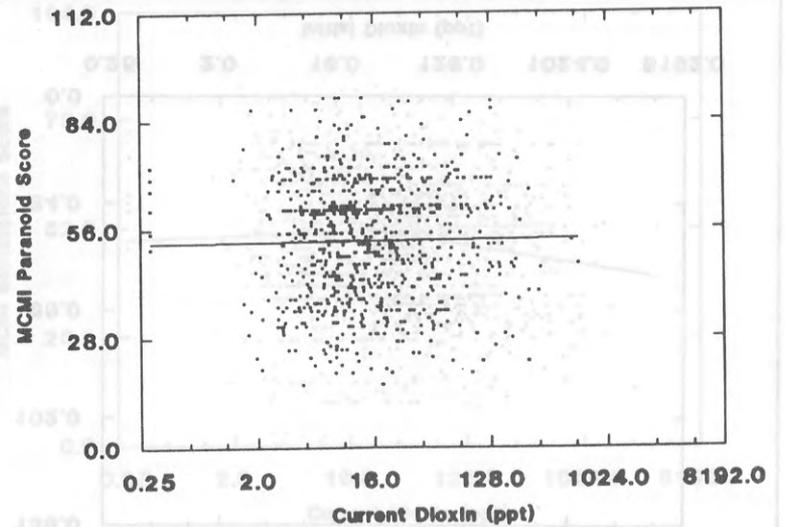


FIGURE H-1-42. MCMC Paranoid Score versus Dioxin

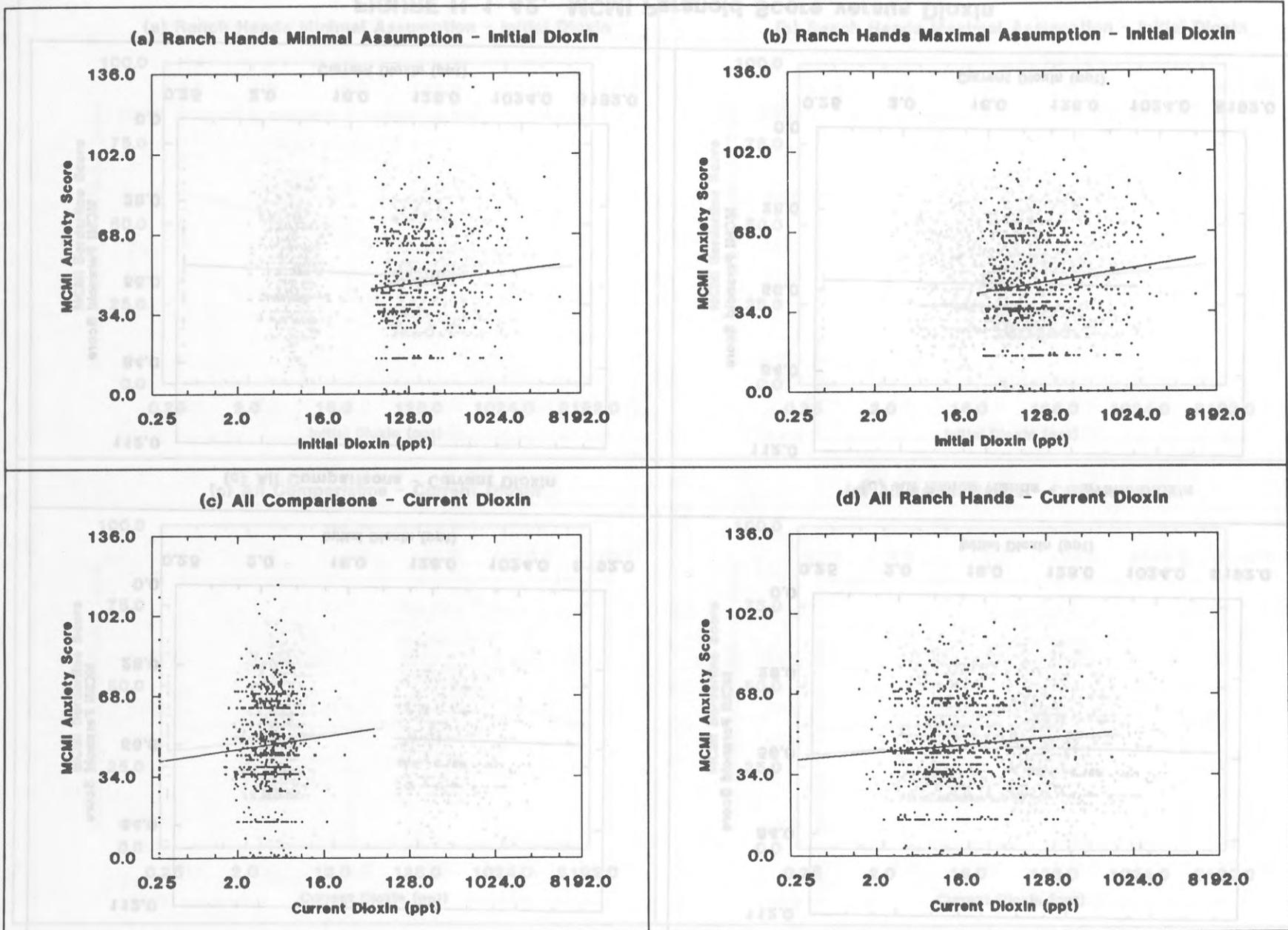


FIGURE H-1-43. MCMC Anxiety Score versus Dioxin

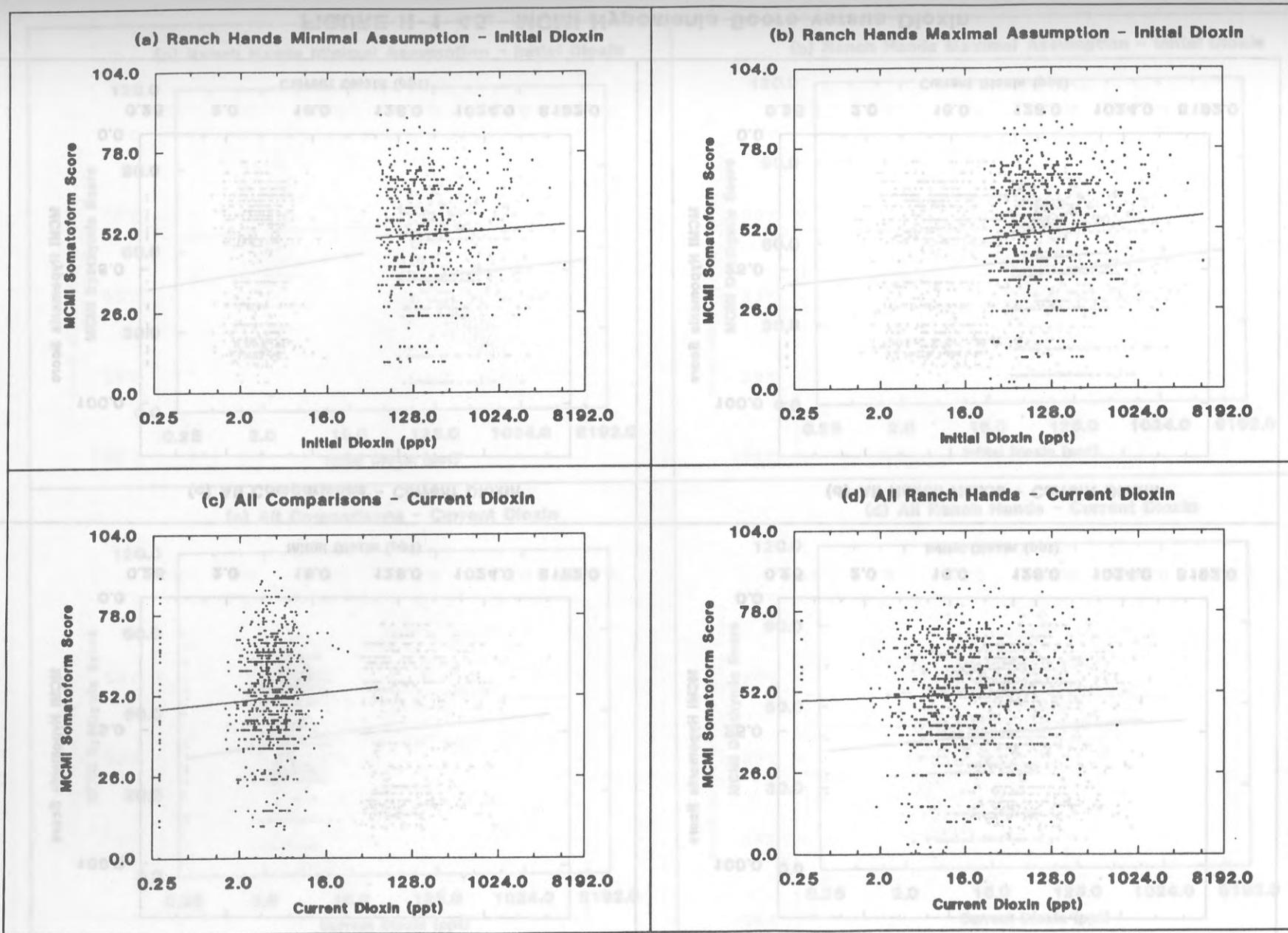


FIGURE H-1-44. MCMC Somatoform Score versus Dioxin

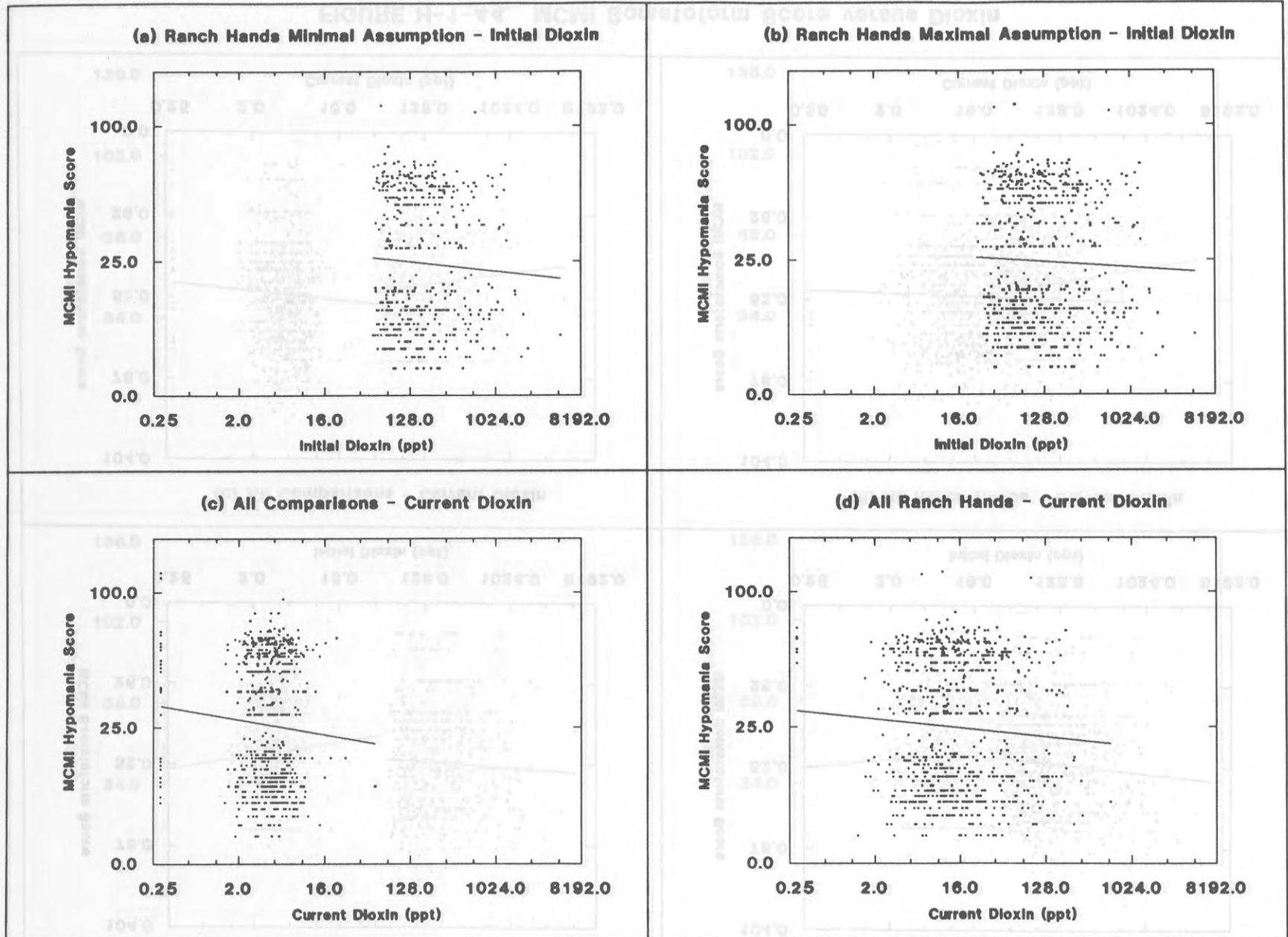


FIGURE H-1-45. MCM Hypomania Score versus Dioxin

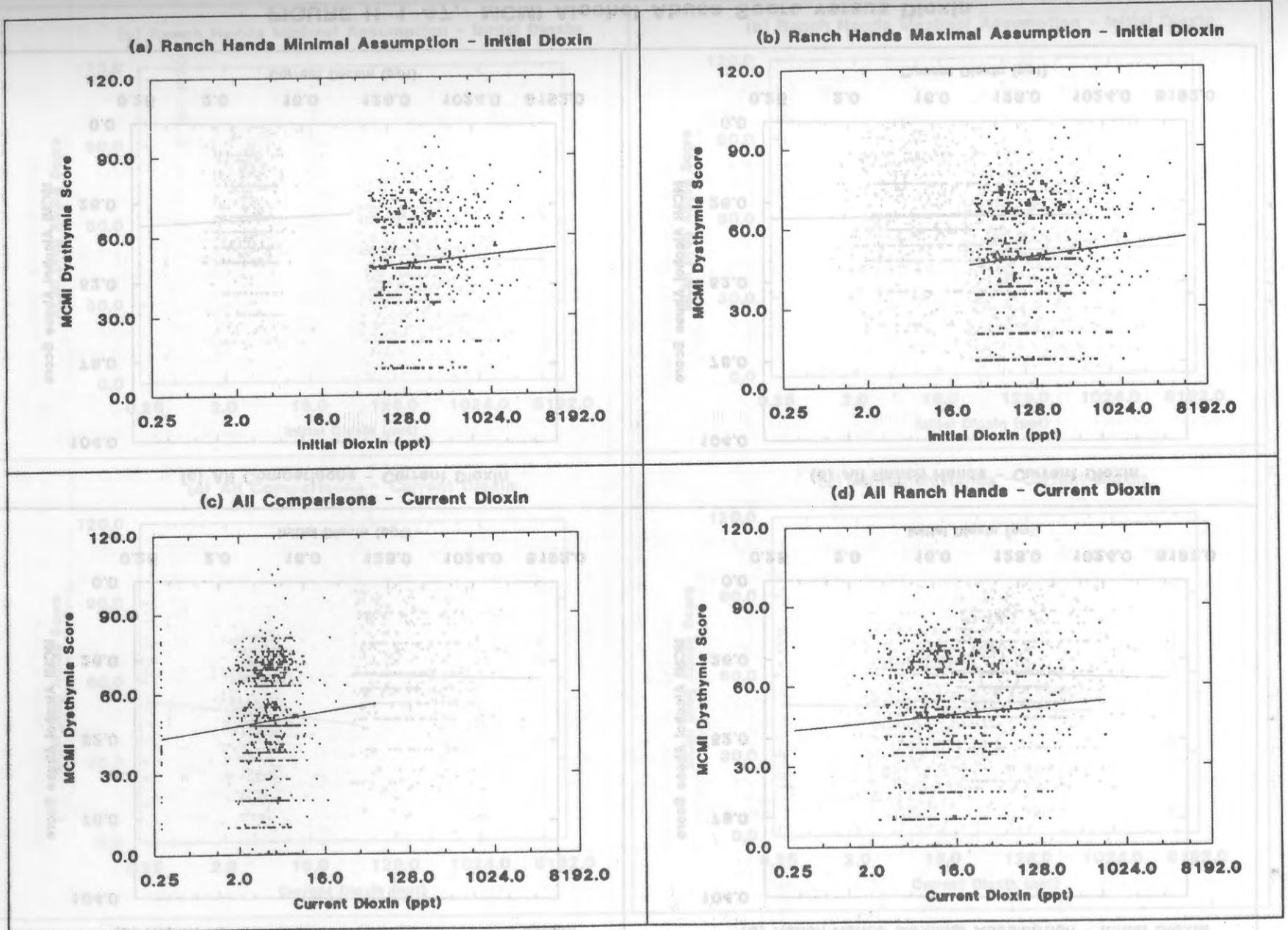


FIGURE H-1-46. MCMC Dysthymia Score versus Dioxin

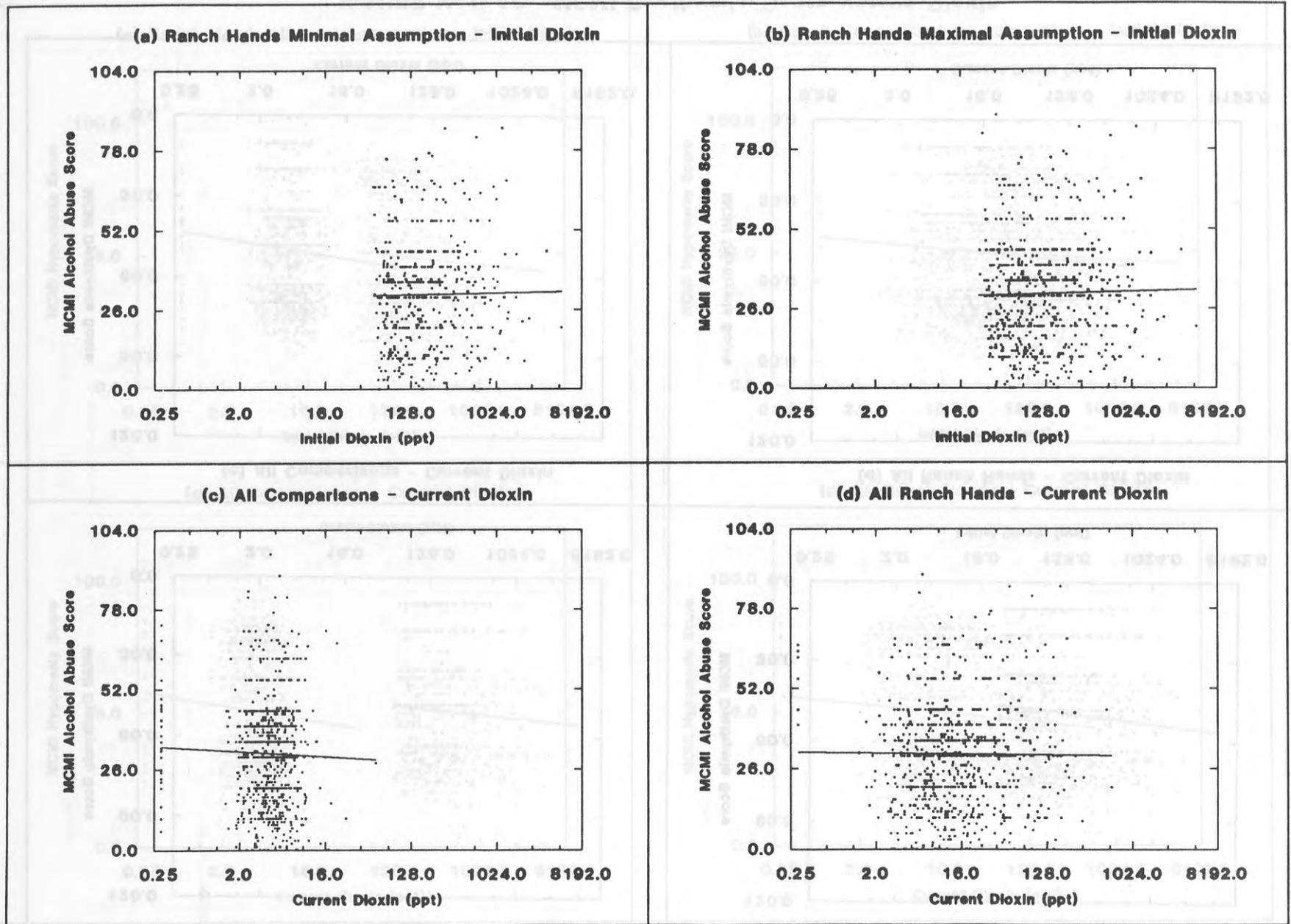


FIGURE H-1-47. MCM Alcohol Abuse Score versus Dioxin

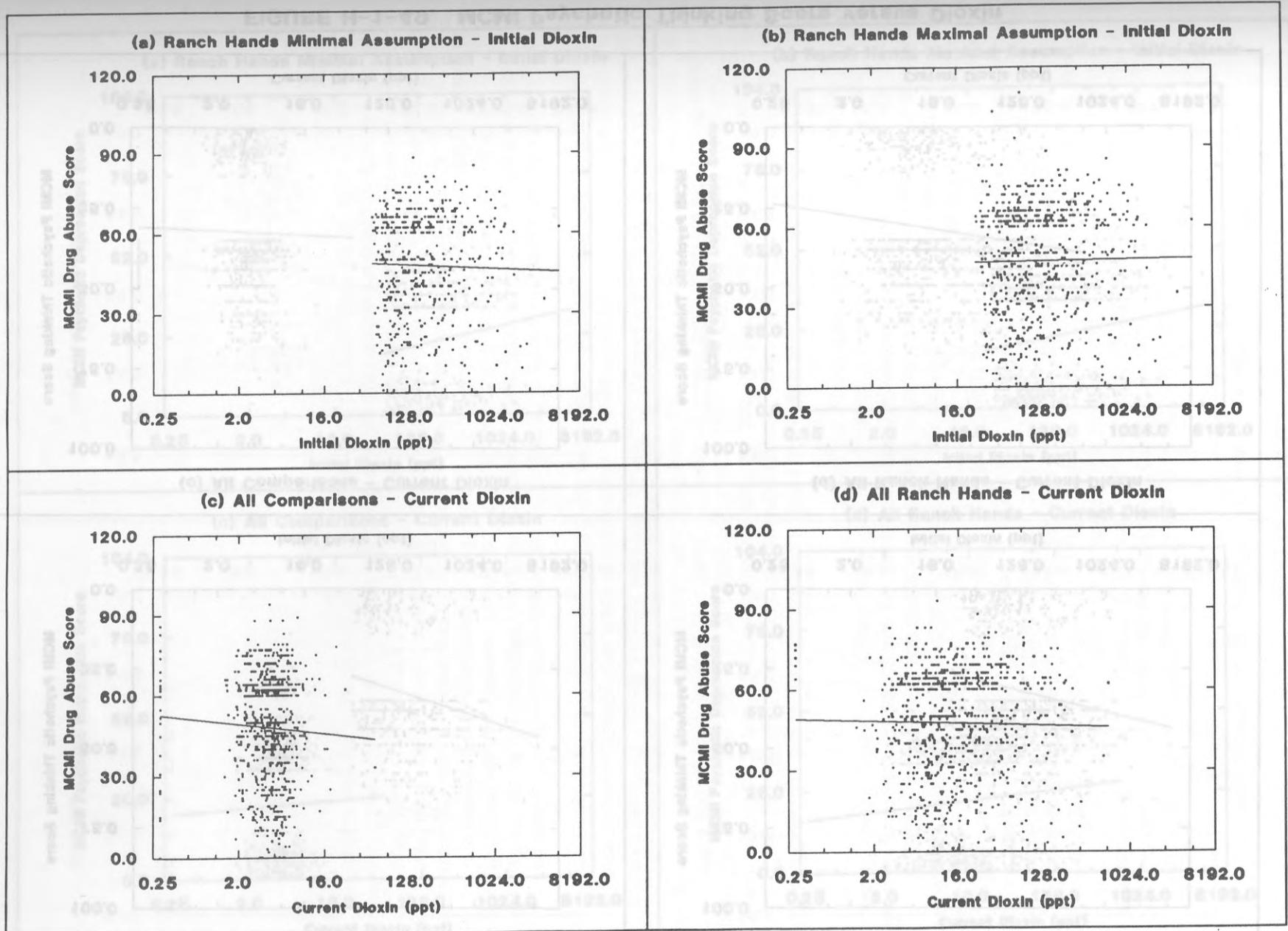


FIGURE H-1-48. MCM Drug Abuse Score versus Dioxin

FIGURE H-1-50. MCM Psychotic Depression Score versus Dioxin

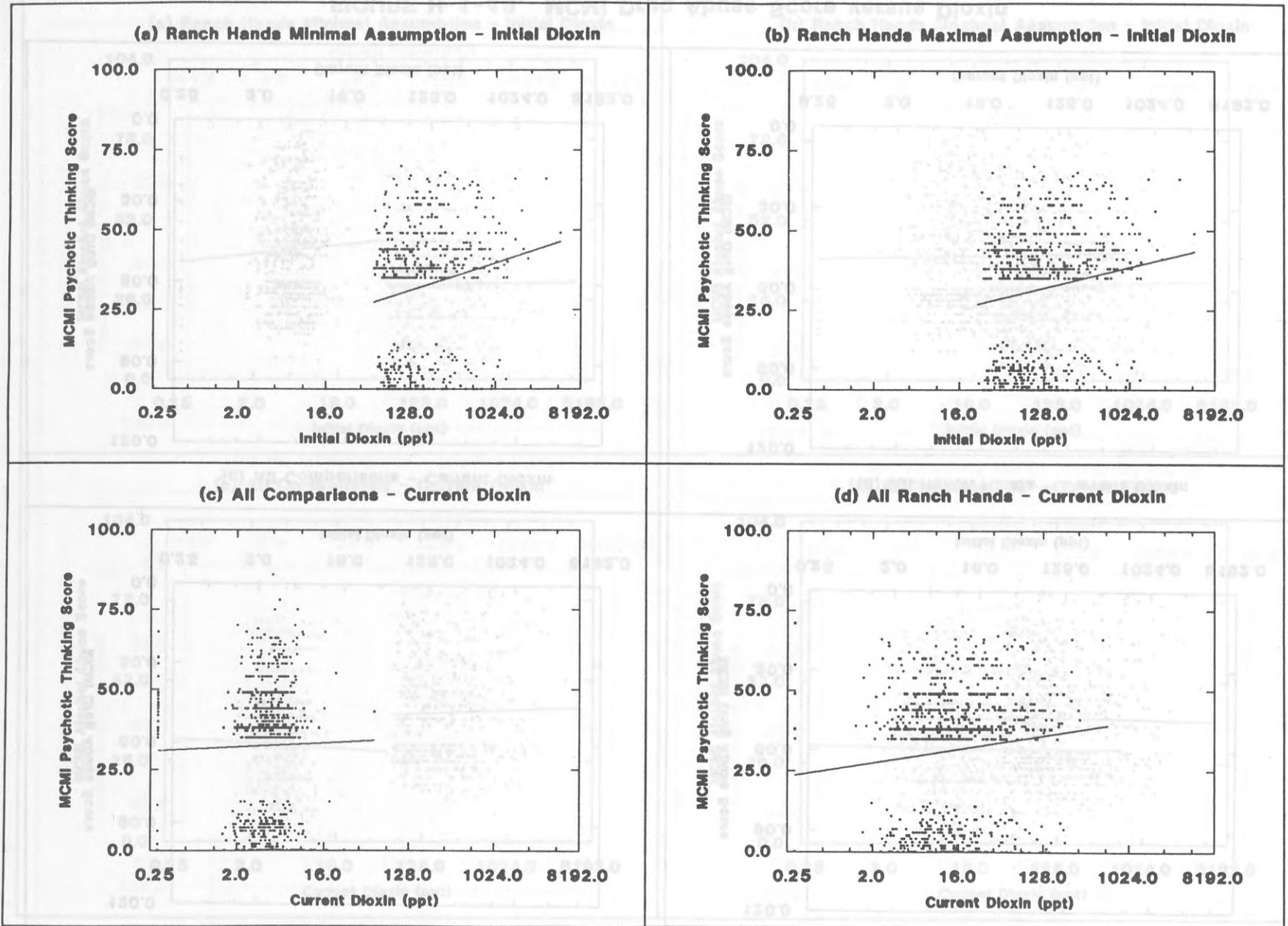


FIGURE H-1-49. MCMC Psychotic Thinking Score versus Dioxin

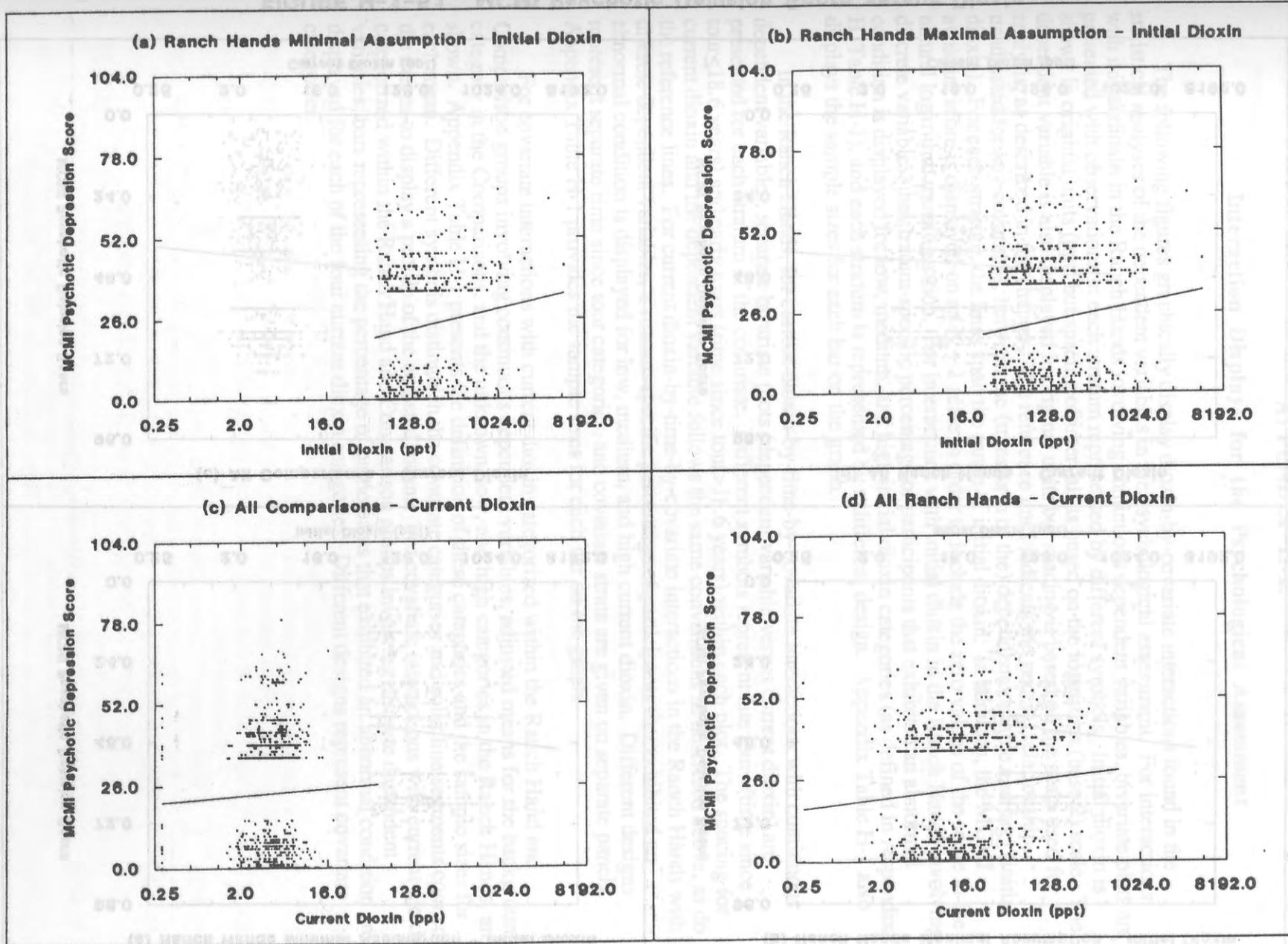


FIGURE H-1-50. MCMC Psychotic Depression Score versus Dioxin

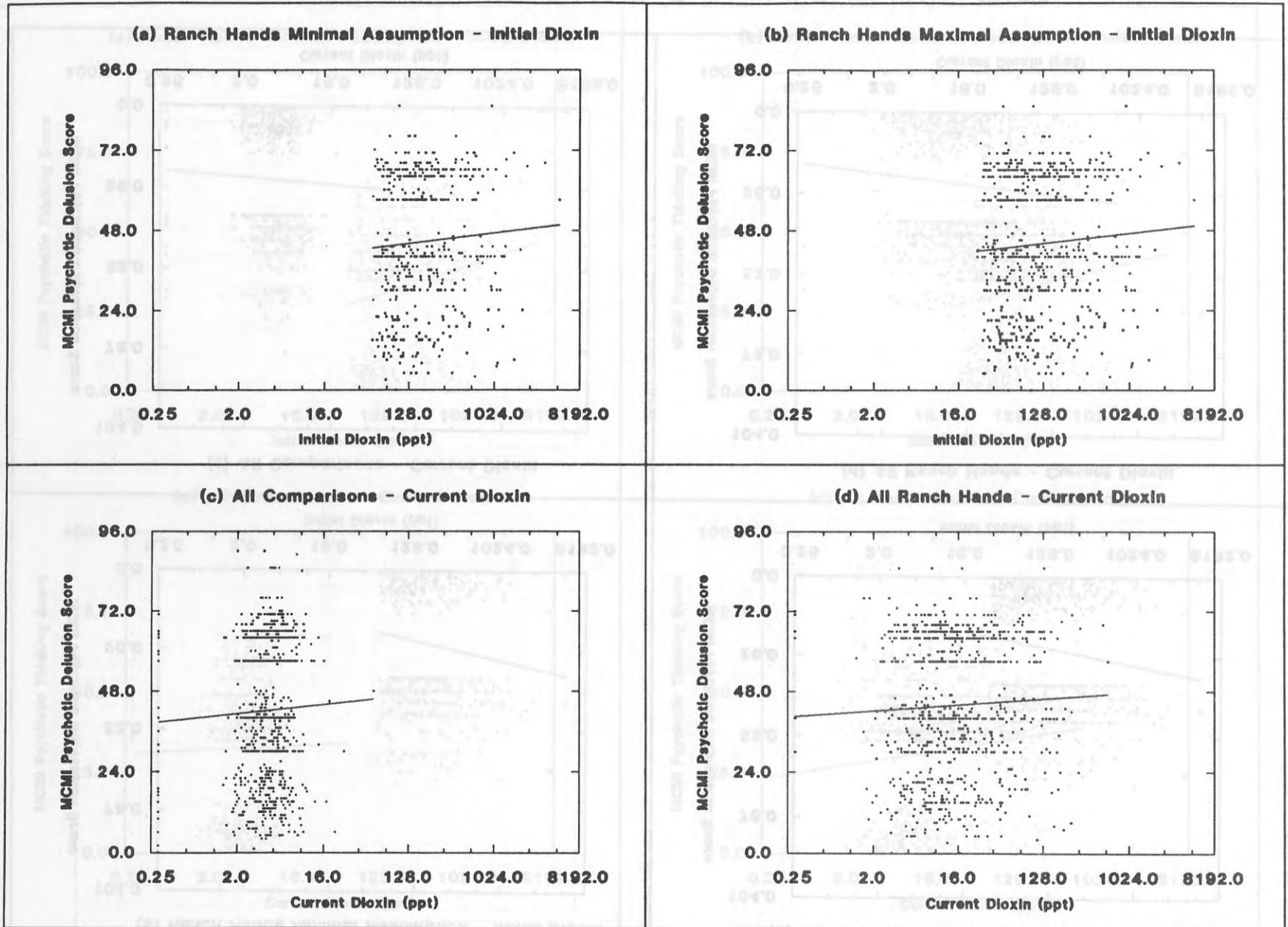


FIGURE H-1-51. MCMC Psychotic Delusion Score versus Dioxin

## APPENDIX H-2.

### Interaction Displays for the Psychological Assessment

The following figures graphically display dioxin-by-covariate interactions found in the statistical analyses of the dependent variables in the psychological assessment. For interactions with initial dioxin in the Ranch Hands involving continuous dependent variables, bivariate plots are presented with observations in each stratum represented by different symbols. Initial dioxin is shown in original units (ppt) but spacing of intervals is based on the logarithm (base 2) scale. The dependent variable is also displayed in original units but spacing is based on the scale used for analysis, as described in the chapter. The reference lines indicate the general relationship, unadjusted for any covariates, between the (transform of the) dependent variable and  $\log_2$  (initial dioxin). For each stratum, the lines span the range of initial dioxin. In addition, the MCMI avoidant score is displayed on an  $X + 1$  scale in order to include the zero values of the score in the natural logarithm transformation. For interactions with initial dioxin in the Ranch Hands involving discrete variables, the stratum-specific percentage of participants that exhibited an abnormal condition is displayed for low, medium, and high initial dioxin categories (as defined in Appendix H, Table H-1), and each stratum is represented by a different design. Appendix Table H-1 also displays the sample sizes for each bar on the graph.

In the Ranch Hands, for current dioxin-by-time-by-covariate interactions with continuous dependent variables, separate bivariate plots (dependent variable versus current dioxin) are presented for each stratum of the covariate. Different symbols represent late tours (time since tour  $\leq 18.6$  years) and early tours (time since tour  $> 18.6$  years) within each plot. The spacing for current dioxin and the dependent variable follows the same conventions as described above, as do the reference lines. For current dioxin-by-time-by-covariate interactions in the Ranch Hands with discrete dependent variables, a stratum-specific percentage of participants that exhibited an abnormal condition is displayed for low, medium, and high current dioxin. Different designs represent separate time since tour categories, and covariate strata are given on separate panels. Appendix Table H-1 provides the sample sizes for each bar on the graph.

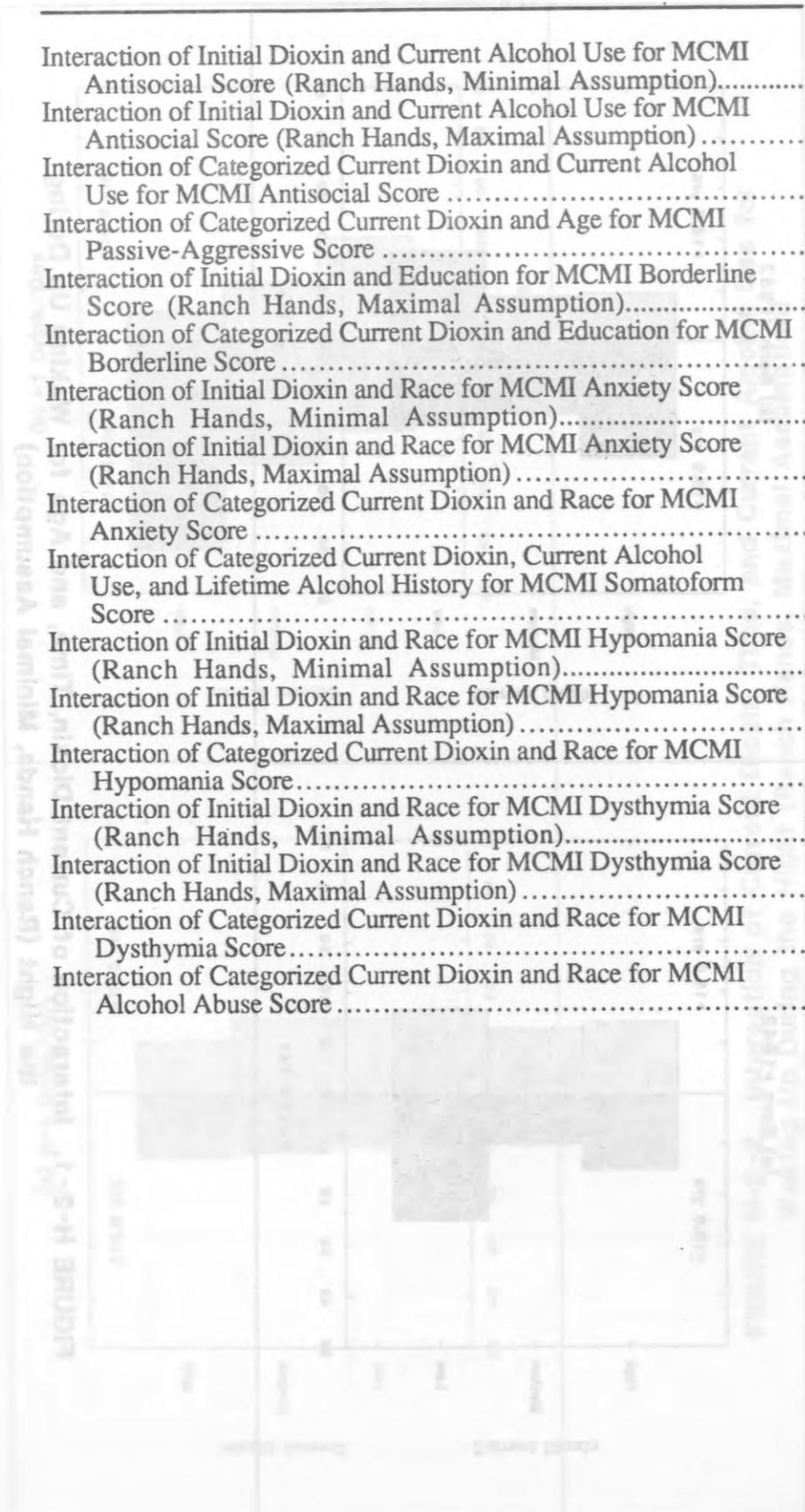
For covariate interactions with current dioxin categorized within the Ranch Hand and Comparison groups involving continuous dependent variables, adjusted means for the background category in the Comparisons, and the unknown, low, and high categories in the Ranch Hands, are shown. Appendix Table H-1 presents the definition of these categories and the sample sizes for each mean. Different symbols distinguish the covariate categories and solid line segments connect the means to display a profile of the adjusted means. For covariate interactions with current dioxin categorized within the Ranch Hand and Comparison groups involving discrete dependent variables, bars representing the percentage of participants that exhibited an abnormal condition are displayed for each of the four current dioxin categories. Different designs represent covariate categories.

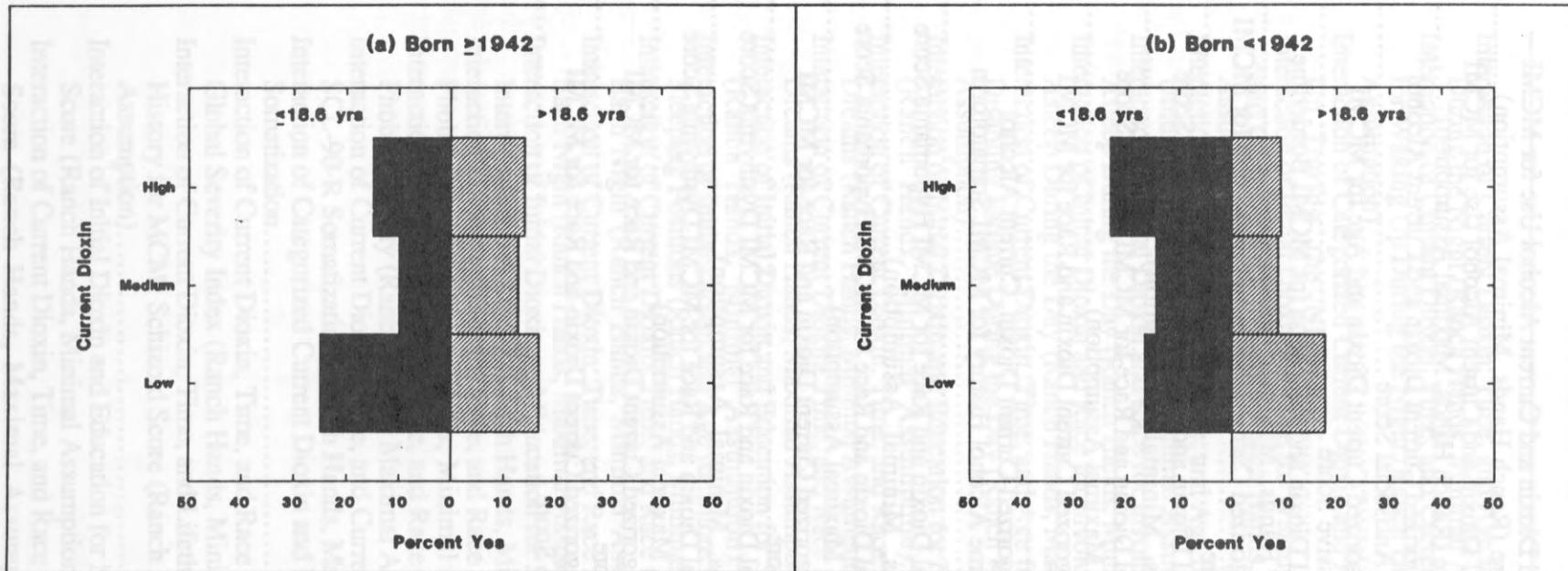
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**Figure**

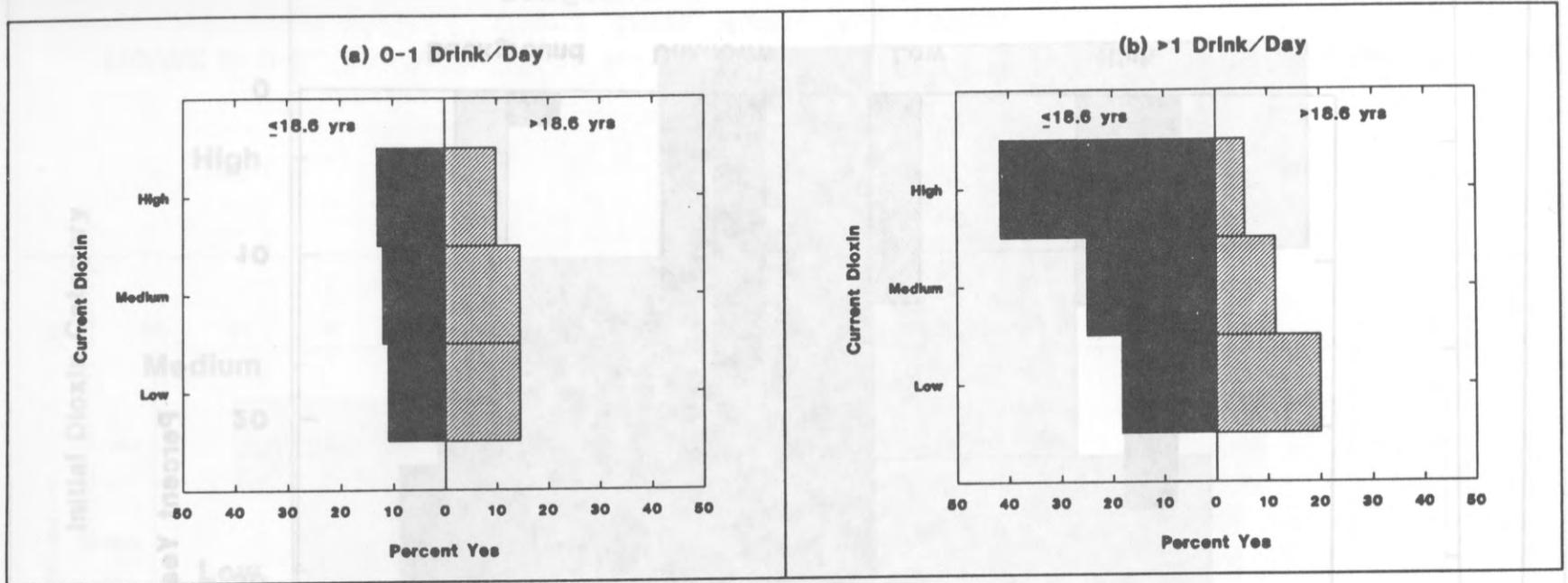
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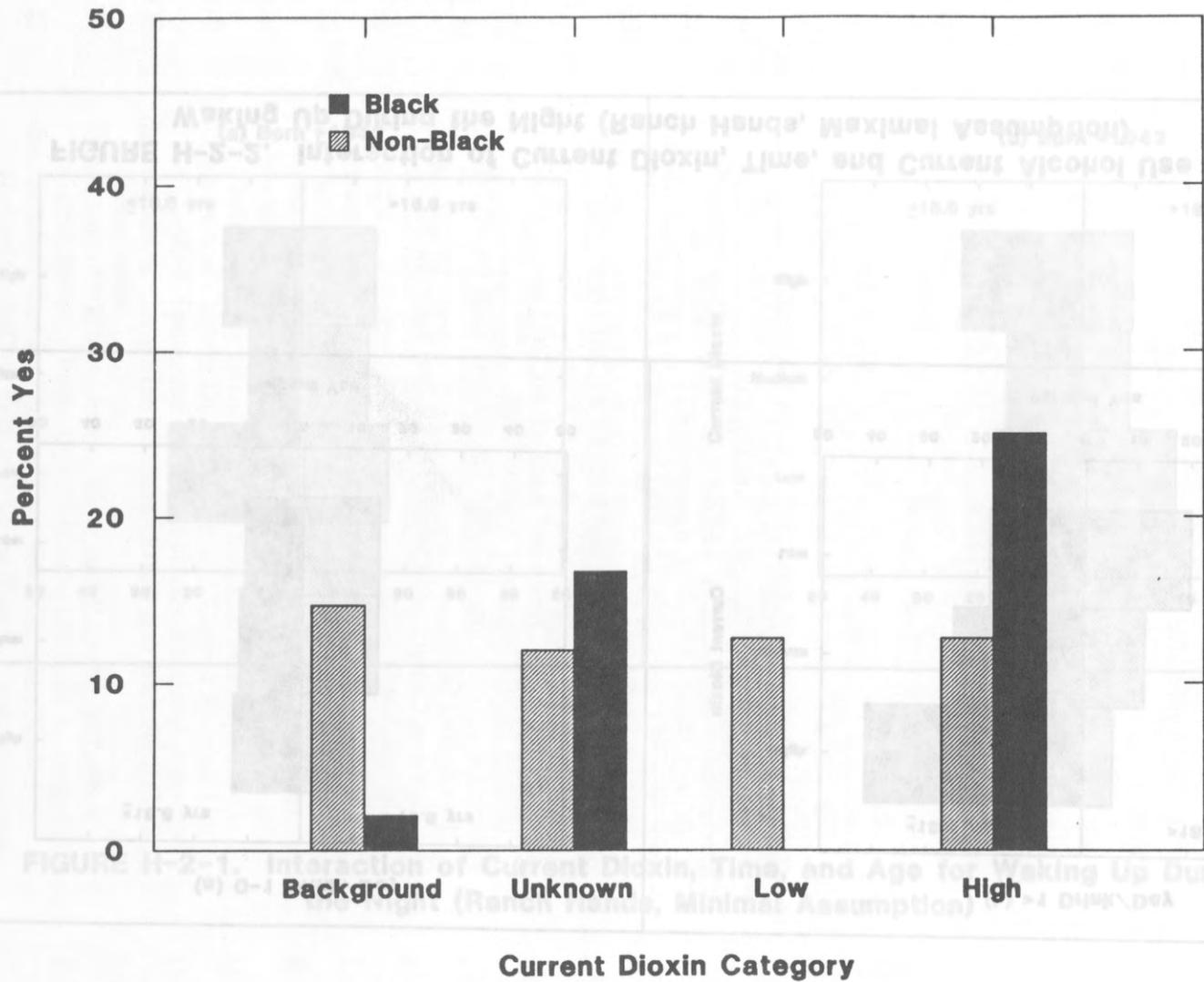




**FIGURE H-2-1. Interaction of Current Dioxin, Time, and Age for Waking Up During the Night (Ranch Hands, Minimal Assumption)**

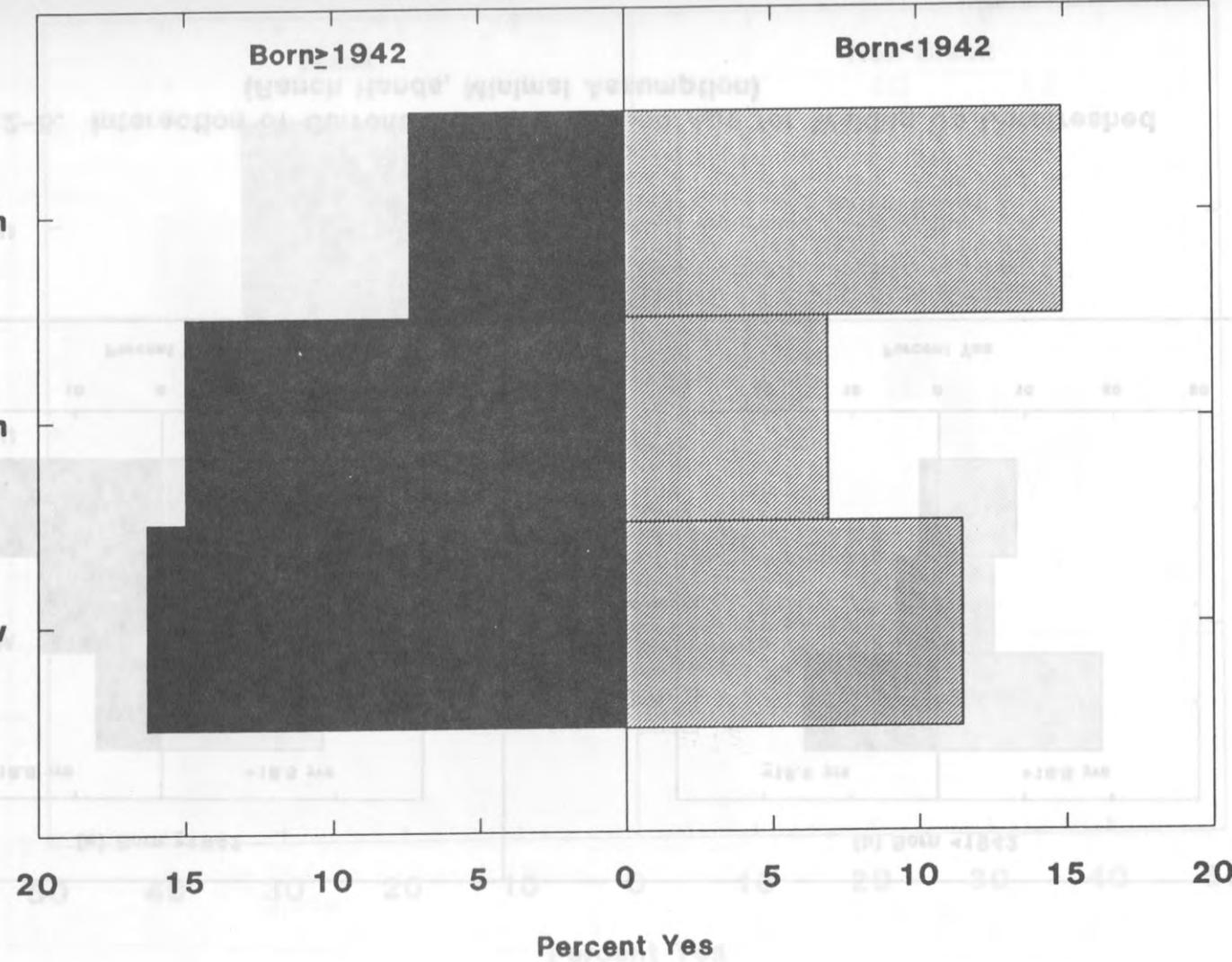


**FIGURE H-2-2. Interaction of Current Dioxin, Time, and Current Alcohol Use for Waking Up During the Night (Ranch Hands, Maximal Assumption)**

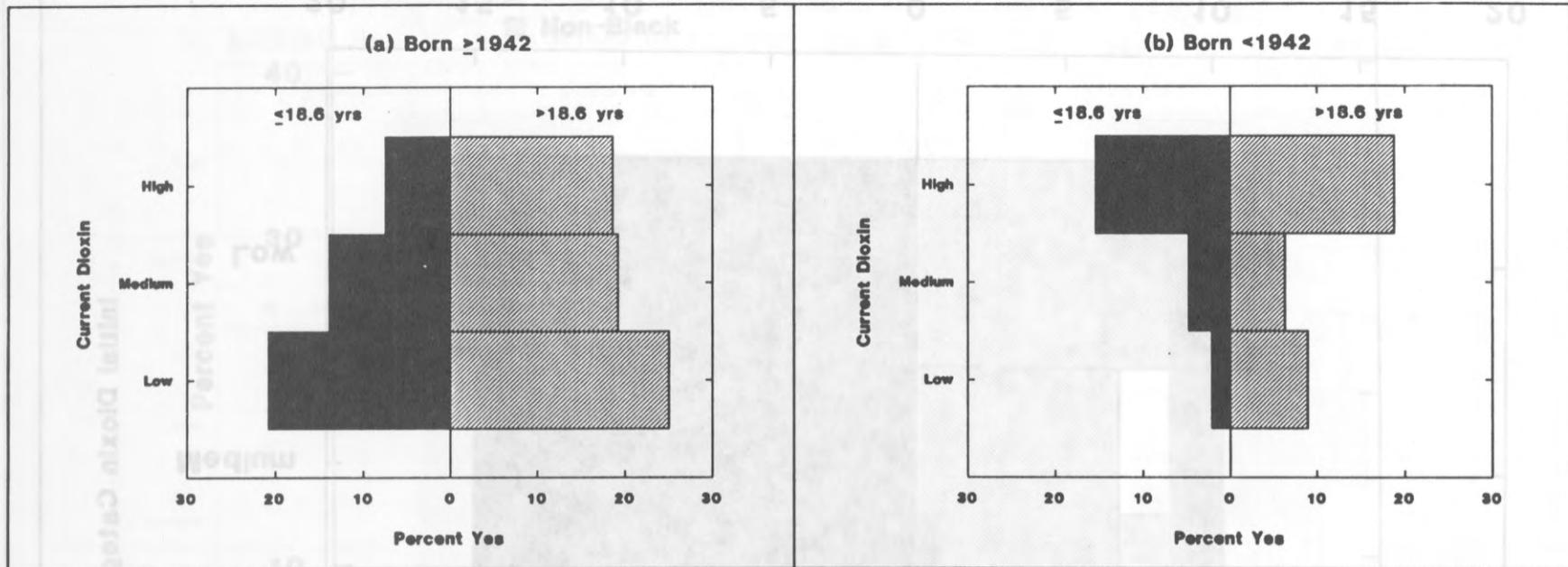


**FIGURE H-2-3. Interaction of Categorized Current Dioxin and Race for Waking Up During the Night**

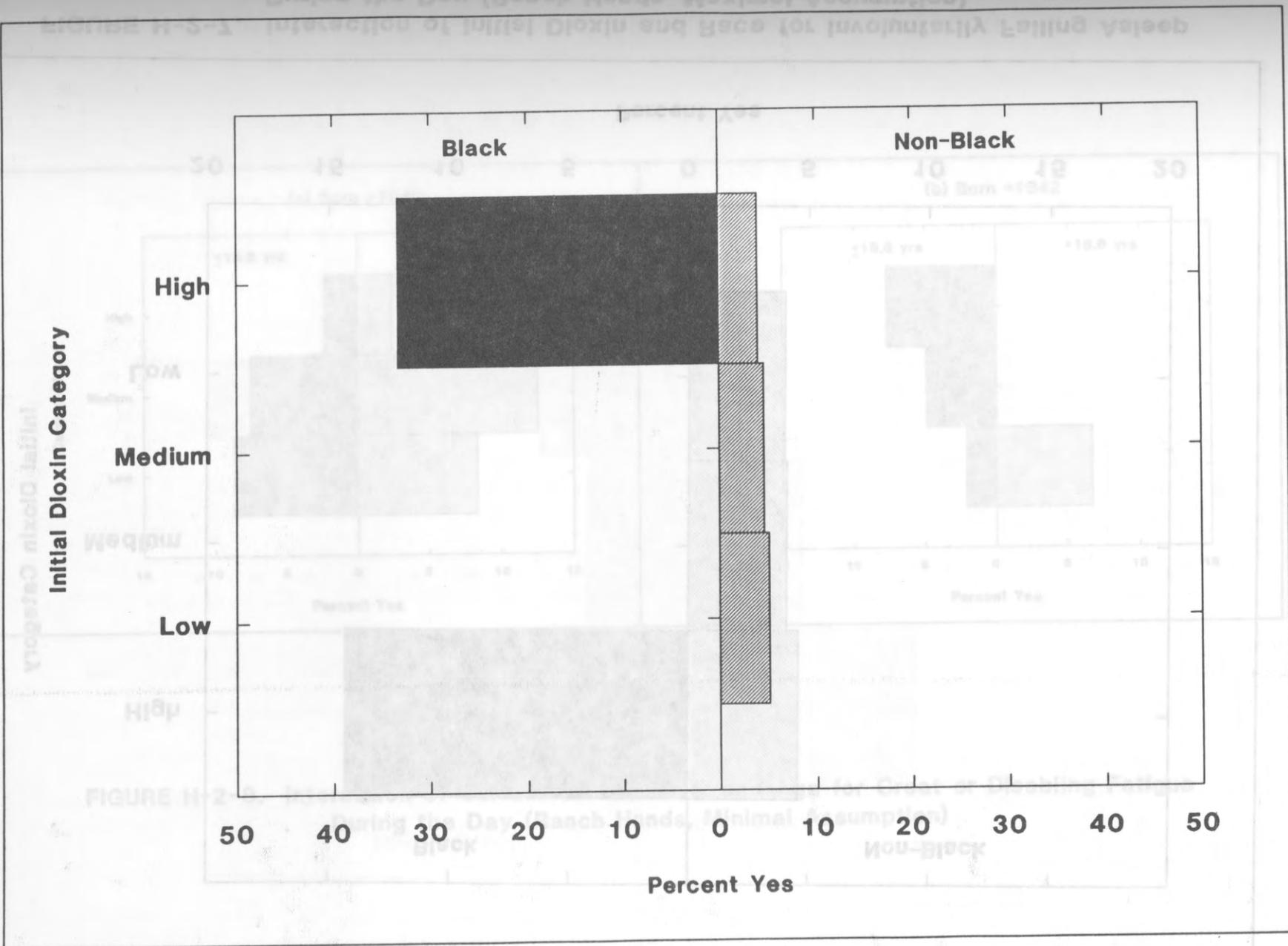
Initial Dioxin Category



**FIGURE H-2-4. Interaction of Initial Dioxin and Age for Waking Up Too Early and Can't Go Back to Sleep (Ranch Hands, Minimal Assumption)**

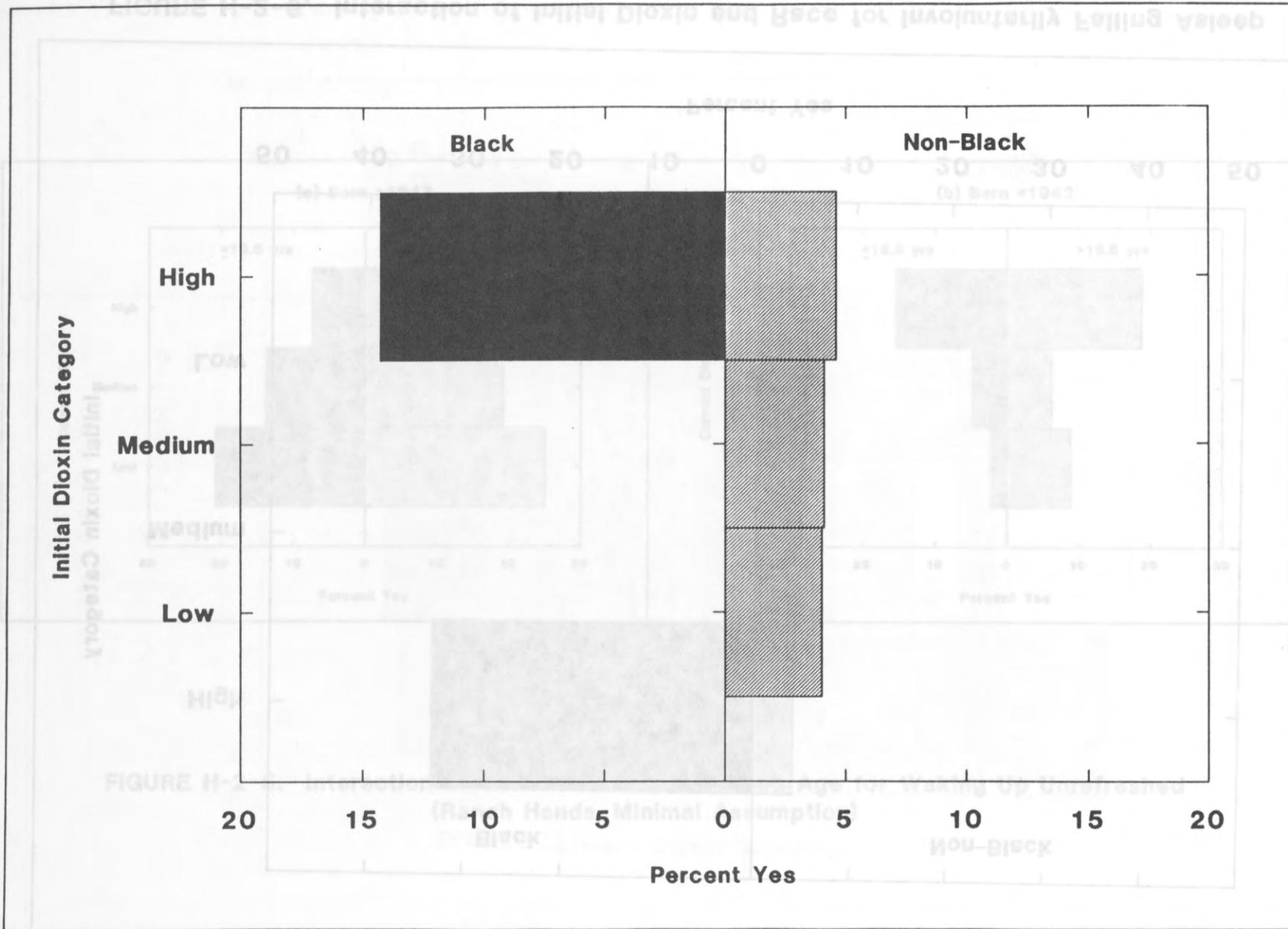


**FIGURE H-2-5. Interaction of Current Dioxin, Time, and Age for Waking Up Unrefreshed (Ranch Hands, Minimal Assumption)**

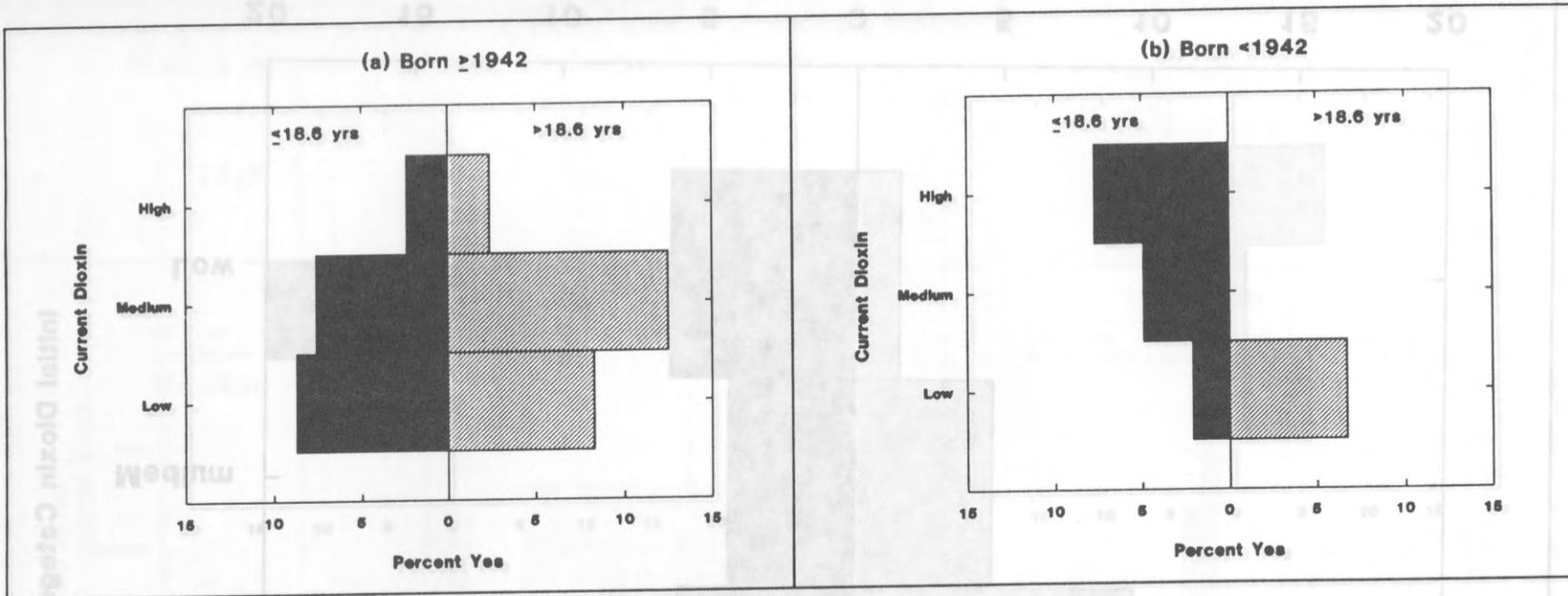


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**FIGURE H-2-6. Interaction of Initial Dioxin and Race for Involuntarily Falling Asleep During the Day (Ranch Hands, Minimal Assumption)**



**FIGURE H-2-7. Interaction of Initial Dioxin and Race for Involuntarily Falling Asleep During the Day (Ranch Hands, Maximal Assumption)**



**FIGURE H-2-8. Interaction of Current Dioxin, Time, and Age for Great or Disabling Fatigue During the Day (Ranch Hands, Minimal Assumption)**

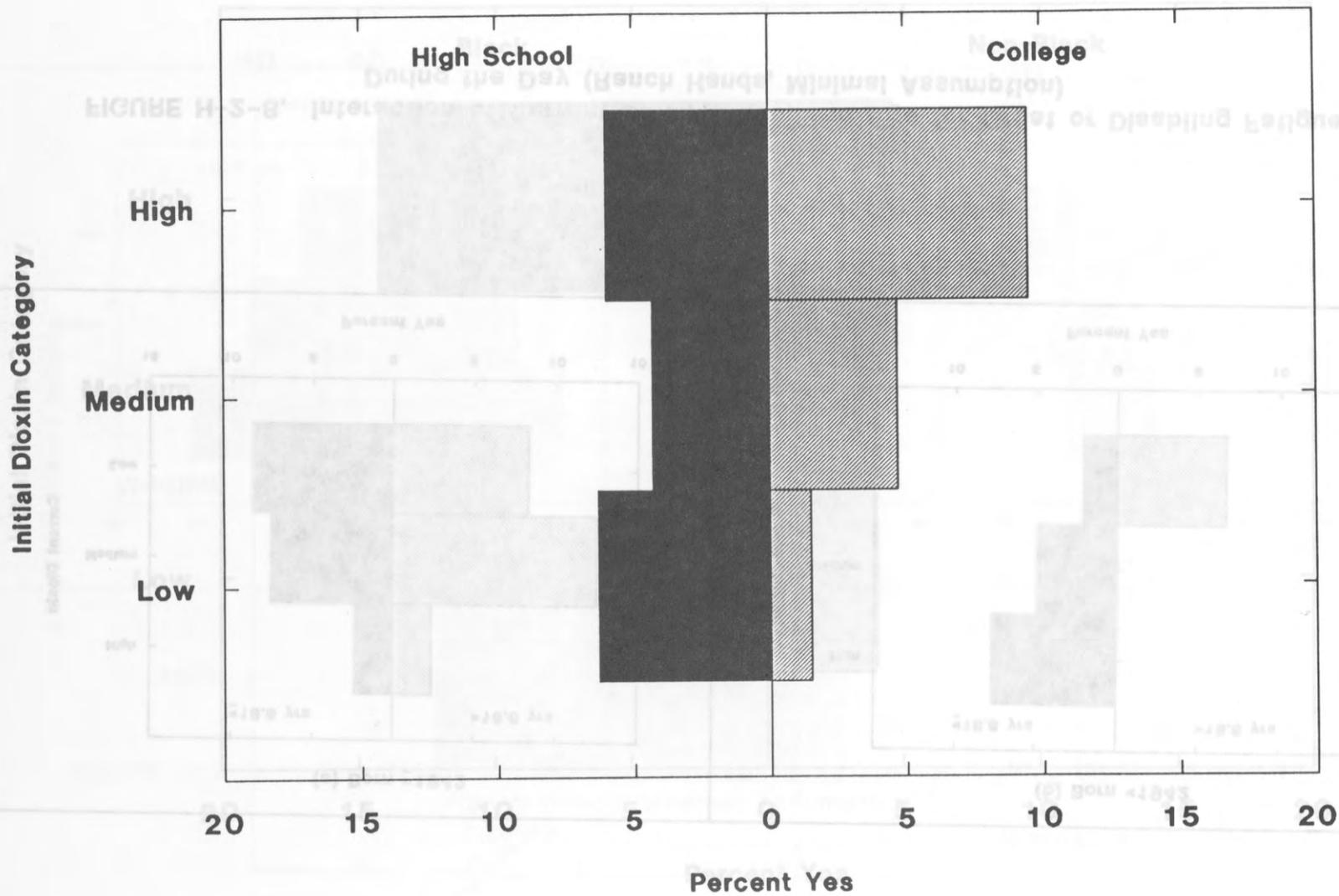


FIGURE H-2-9. Interaction of Initial Dioxin and Education for Frightening Dreams (Ranch Hands, Minimal Assumption)

H-2-13

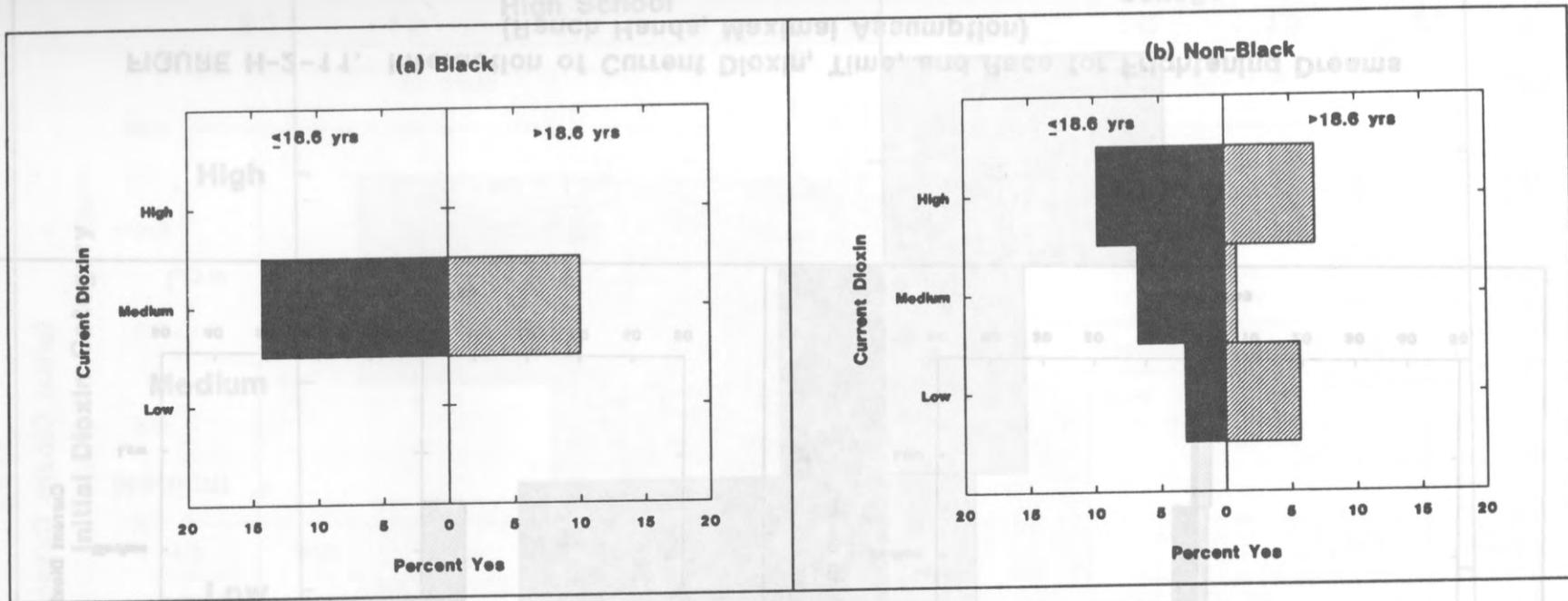
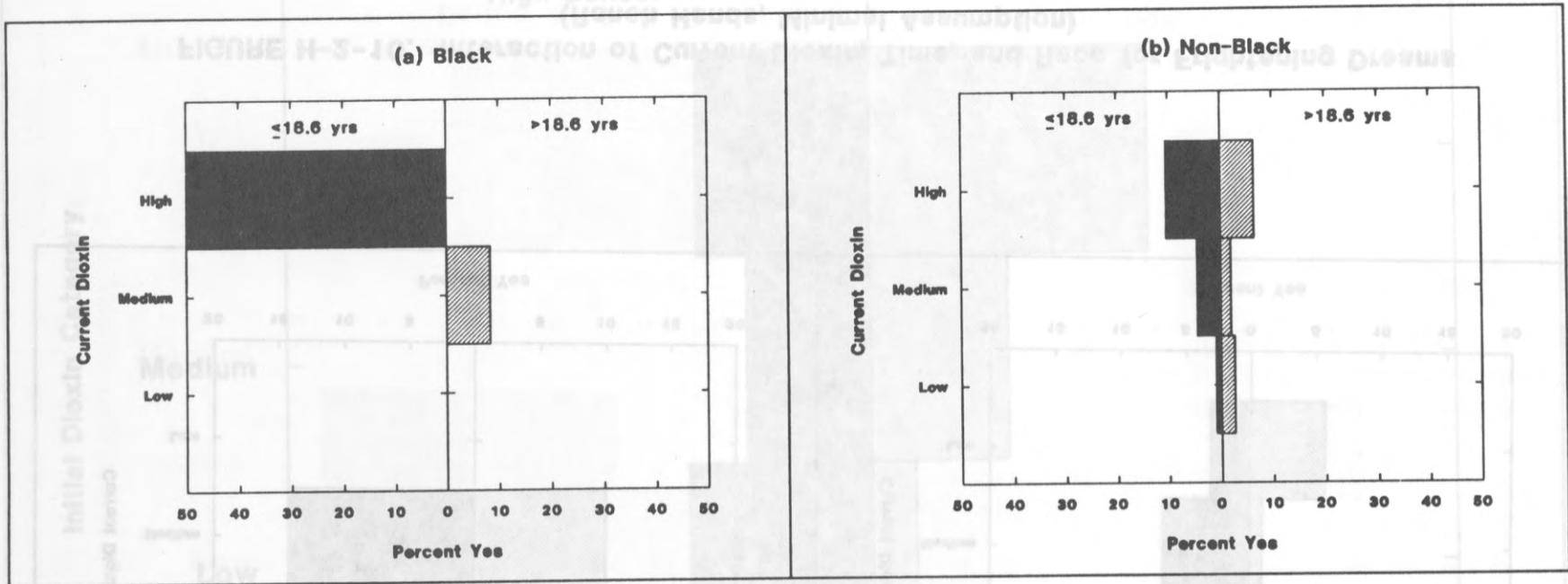
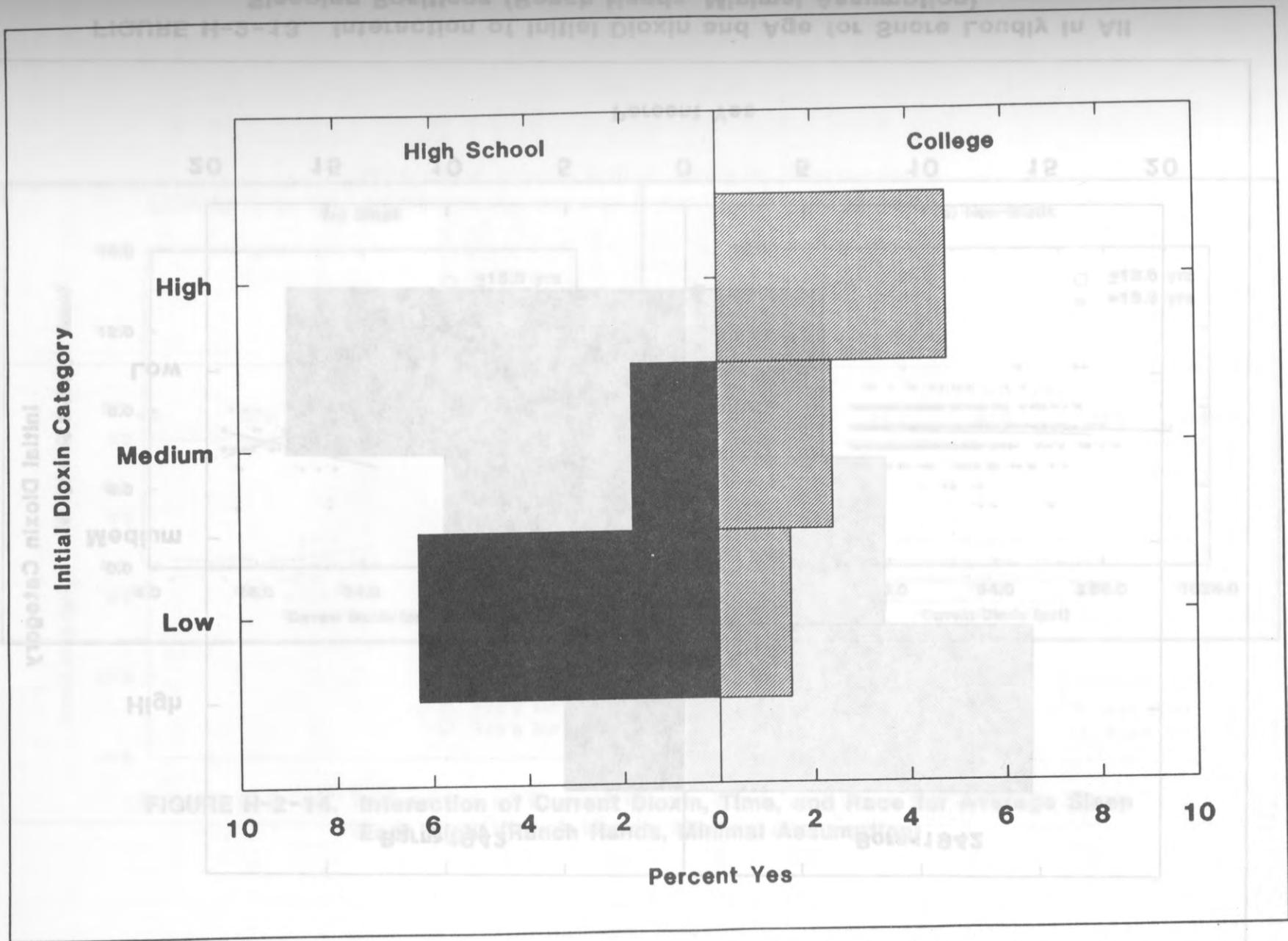


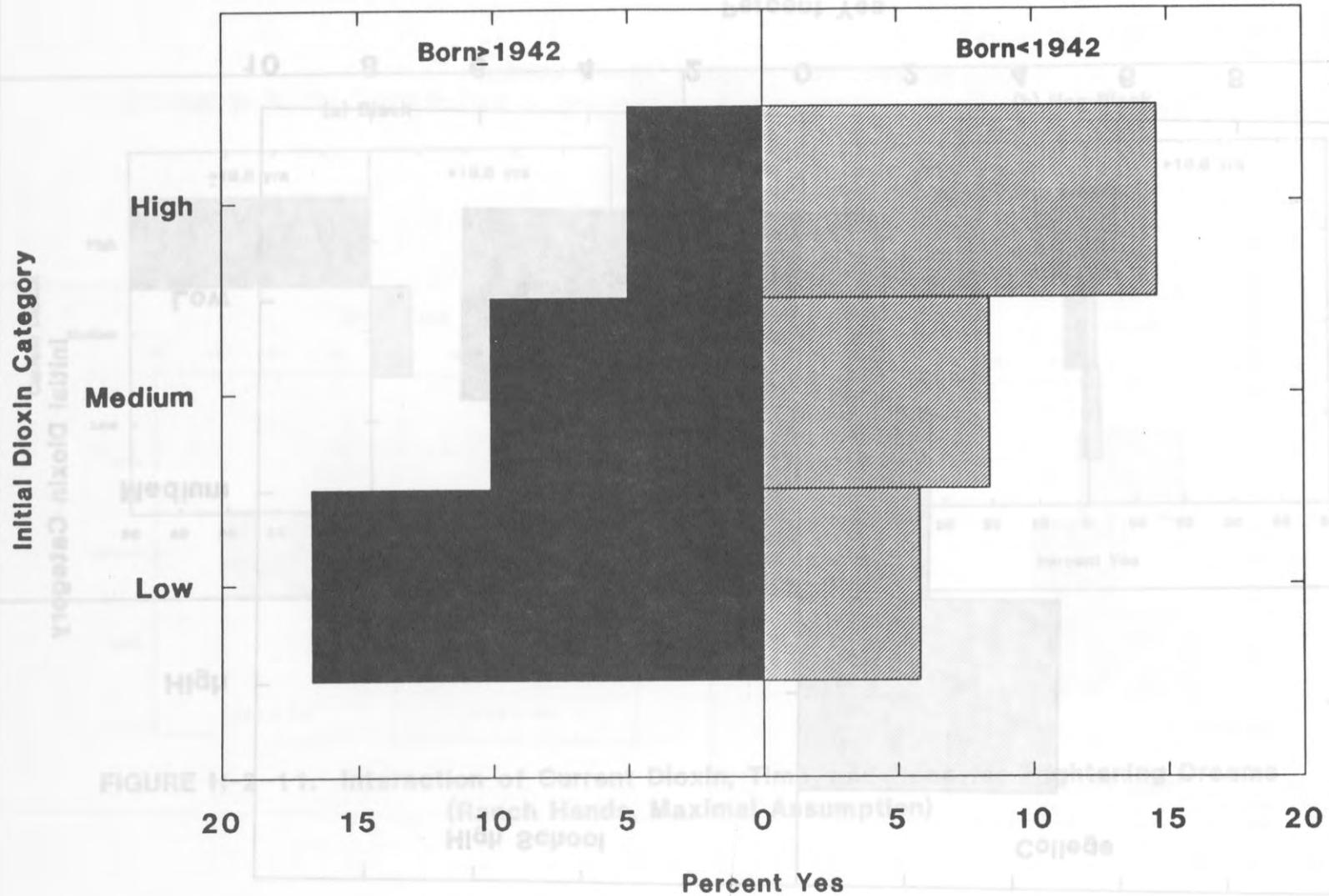
FIGURE H-2-10. Interaction of Current Dioxin, Time, and Race for Frightening Dreams (Ranch Hands, Minimal Assumption)



**FIGURE H-2-11. Interaction of Current Dioxin, Time, and Race for Frightening Dreams (Ranch Hands, Maximal Assumption)**



**FIGURE H-2-12. Interaction of Initial Dioxin and Education for Sleepwalking (Ranch Hands, Minimal Assumption)**



**FIGURE H-2-13. Interaction of Initial Dioxin and Age for Snore Loudly in All Sleeping Positions (Ranch Hands, Minimal Assumption)**

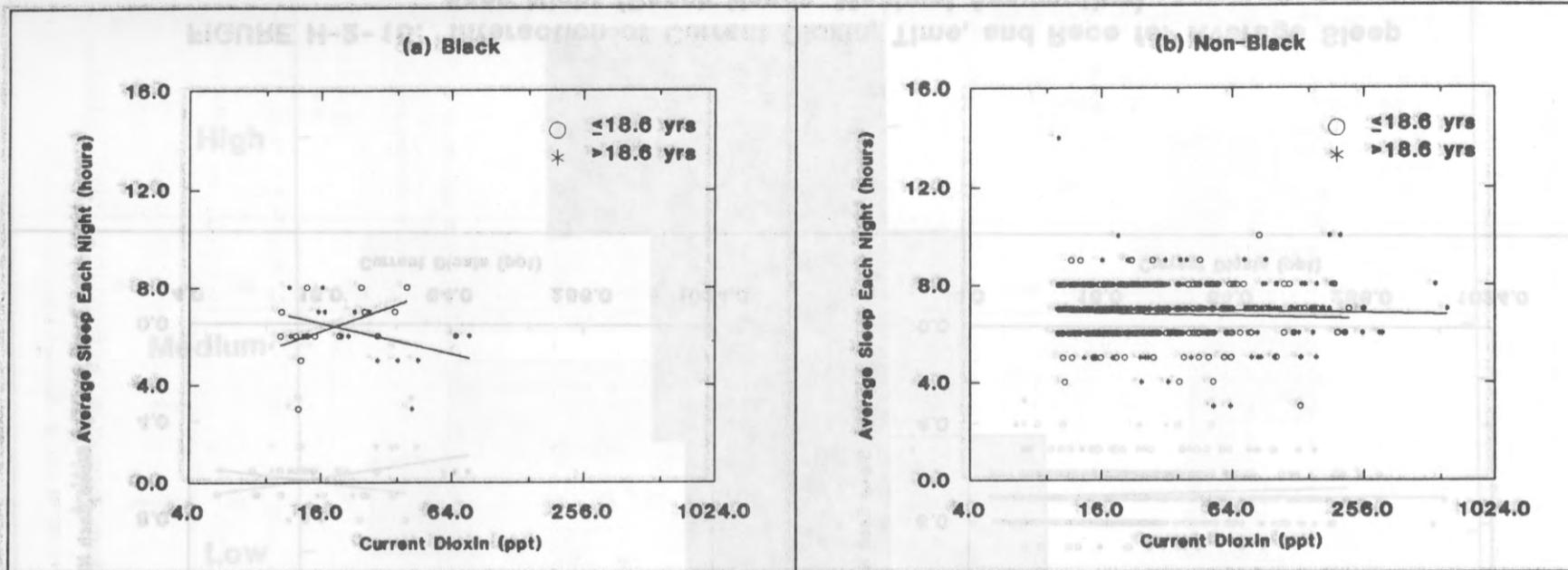
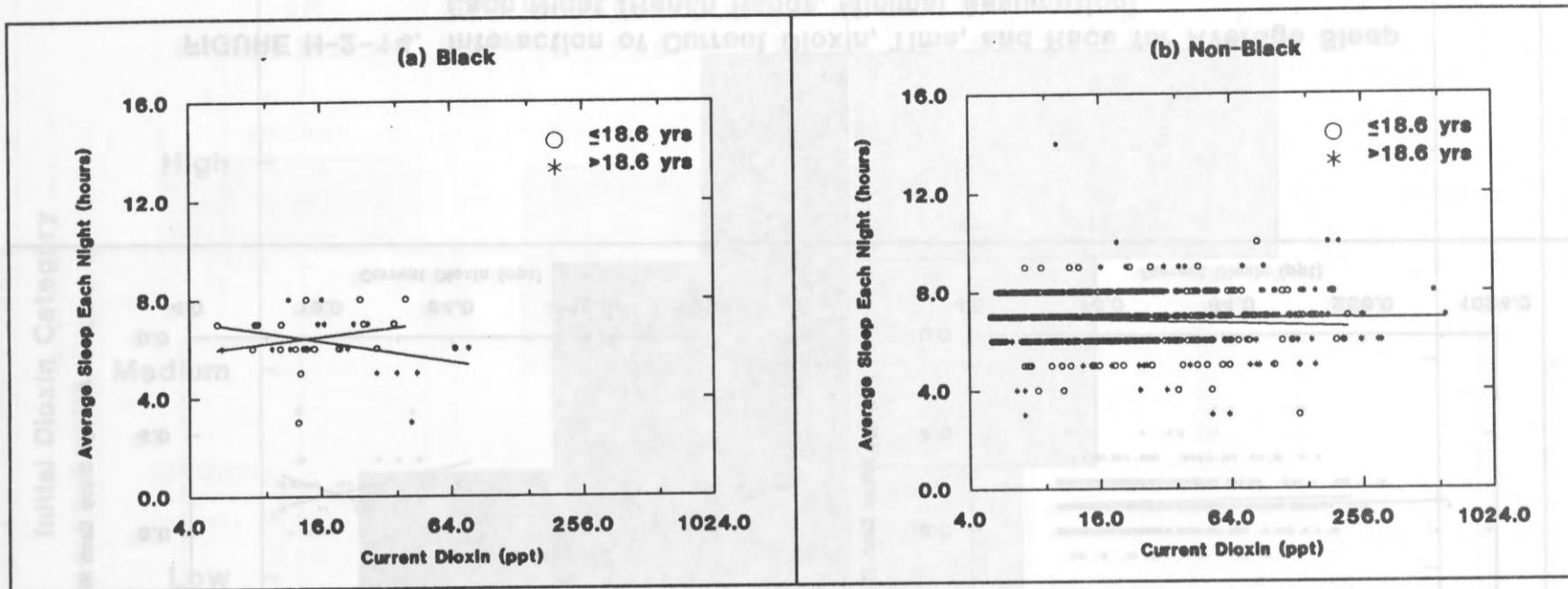
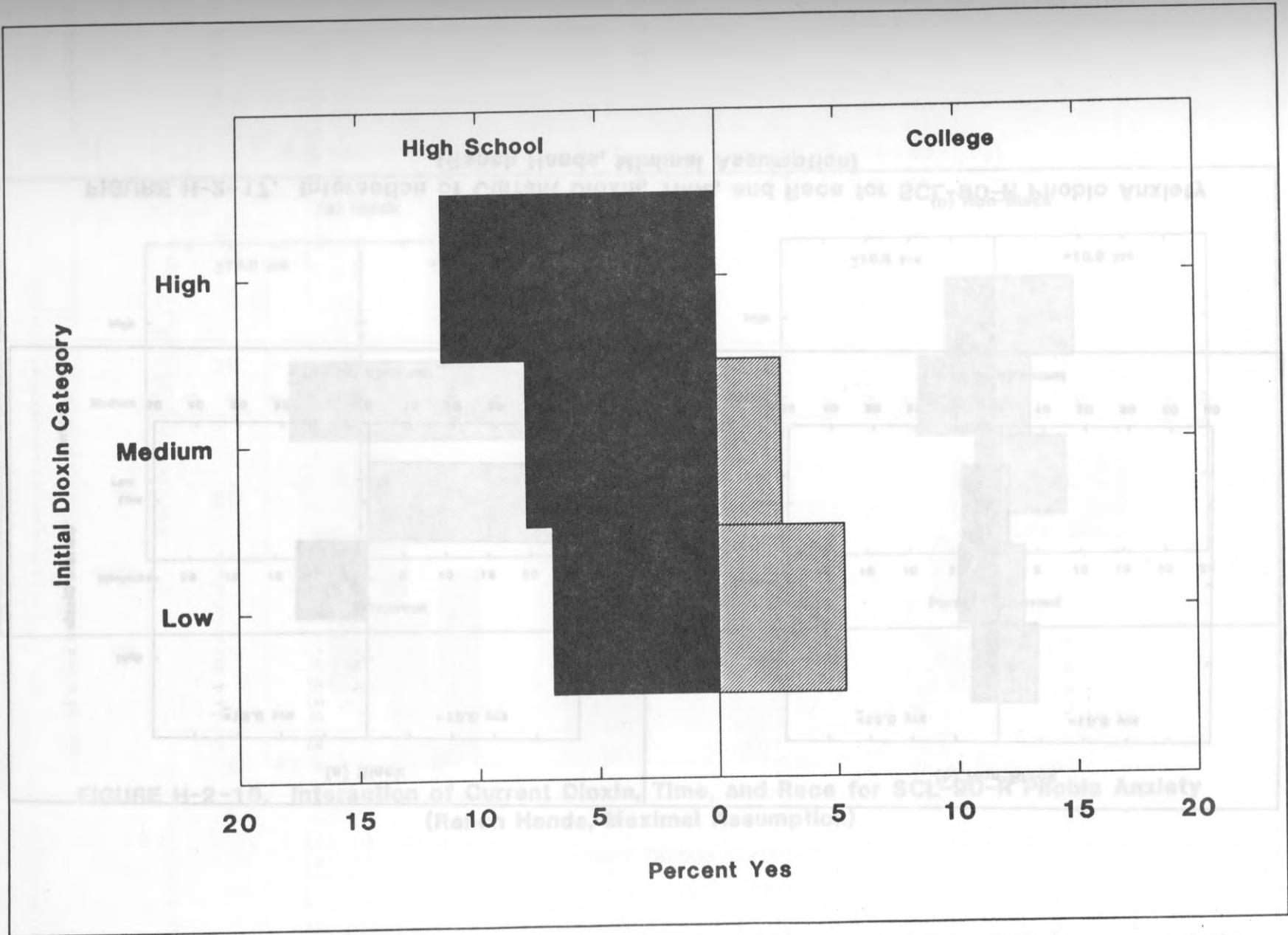


FIGURE H-2-14. Interaction of Current Dioxin, Time, and Race for Average Sleep Each Night (Ranch Hands, Minimal Assumption)



**FIGURE H-2-15. Interaction of Current Dioxin, Time, and Race for Average Sleep Each Night (Ranch Hands, Maximal Assumption)**



**FIGURE H-2-16. Interaction of Initial Dioxin and Education for SCL-90-R Interpersonal Sensitivity (Ranch Hands, Minimal Assumption)**

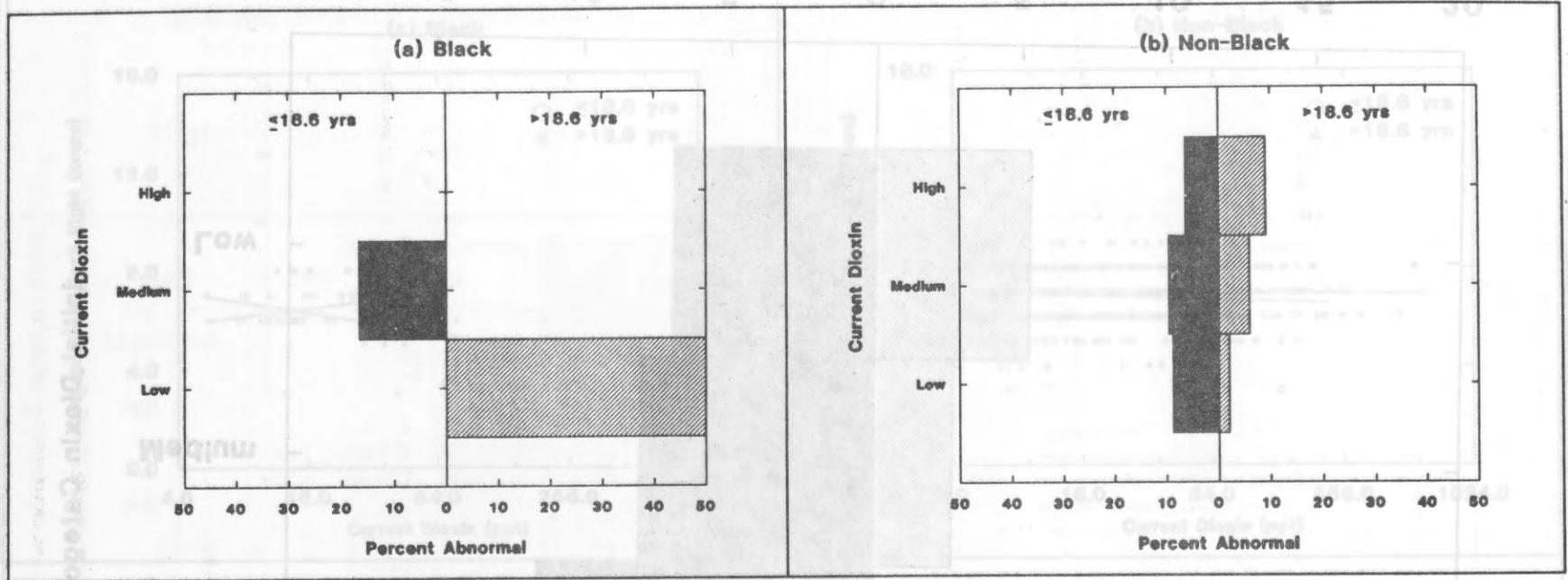
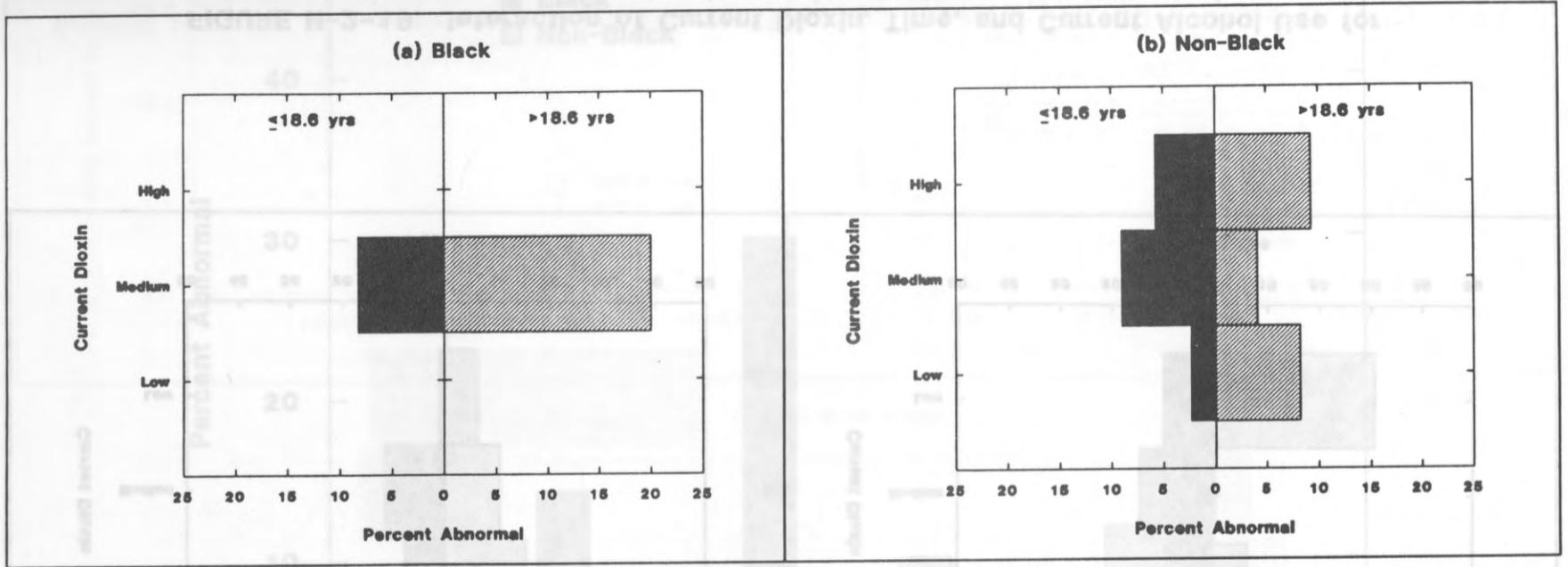
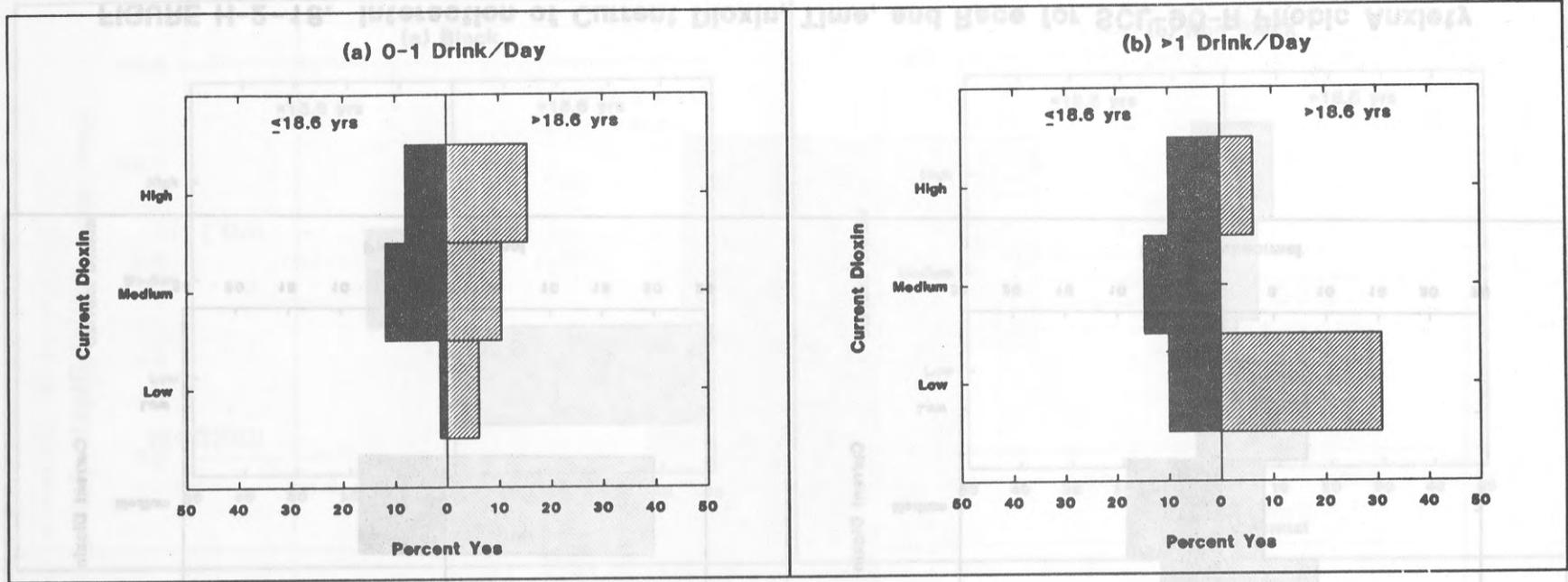


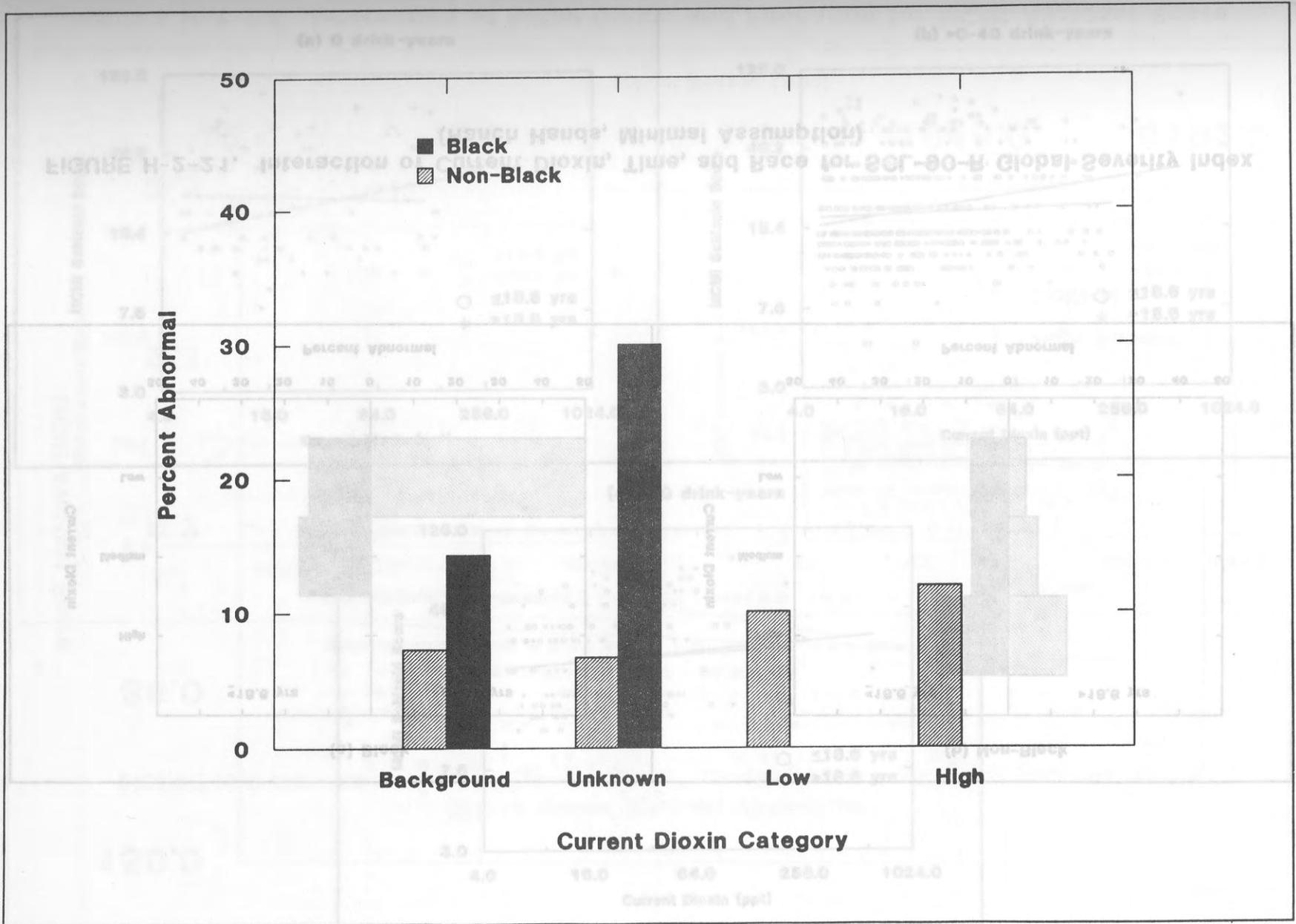
FIGURE H-2-17. Interaction of Current Dioxin, Time, and Race for SCL-90-R Phobic Anxiety (Ranch Hands, Minimal Assumption)



**FIGURE H-2-18. Interaction of Current Dioxin, Time, and Race for SCL-90-R Phobic Anxiety (Ranch Hands, Maximal Assumption)**



**FIGURE H-2-19. Interaction of Current Dioxin, Time, and Current Alcohol Use for SCL-90-R Somatization (Ranch Hands, Maximal Assumption)**



**FIGURE H-2-20. Interaction of Categorized Current Dioxin and Race for SCL-90-R Somatization**

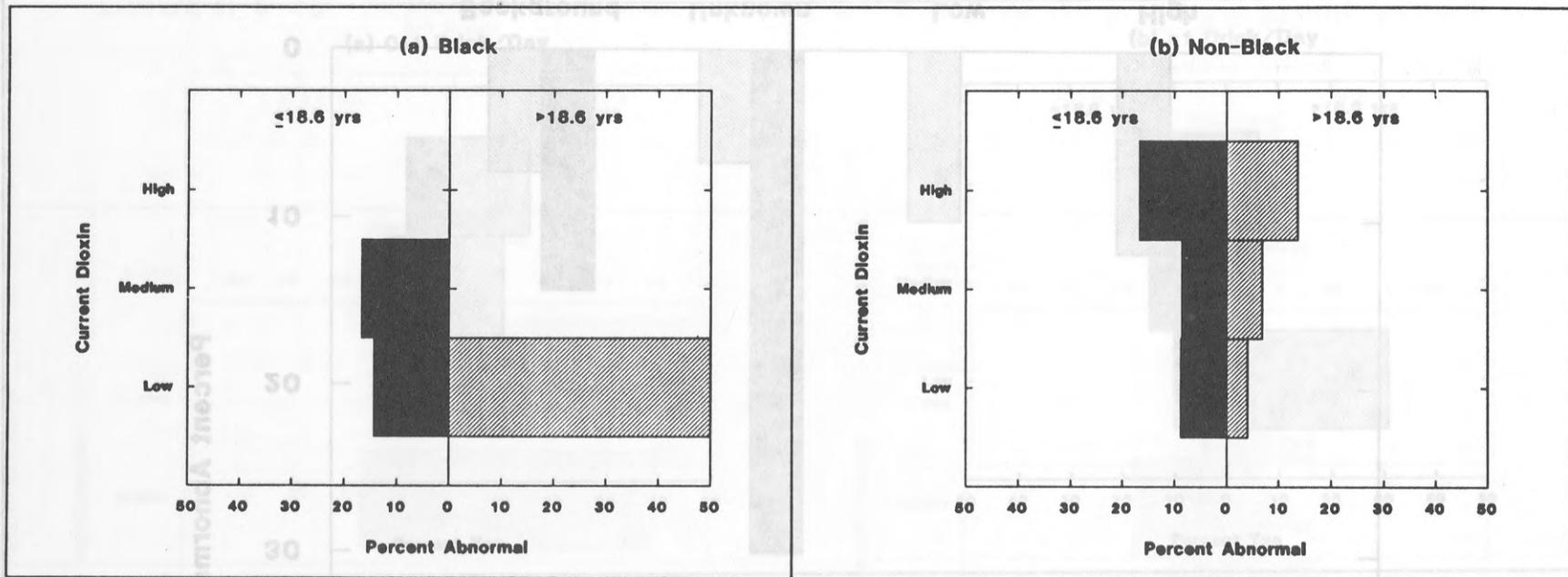
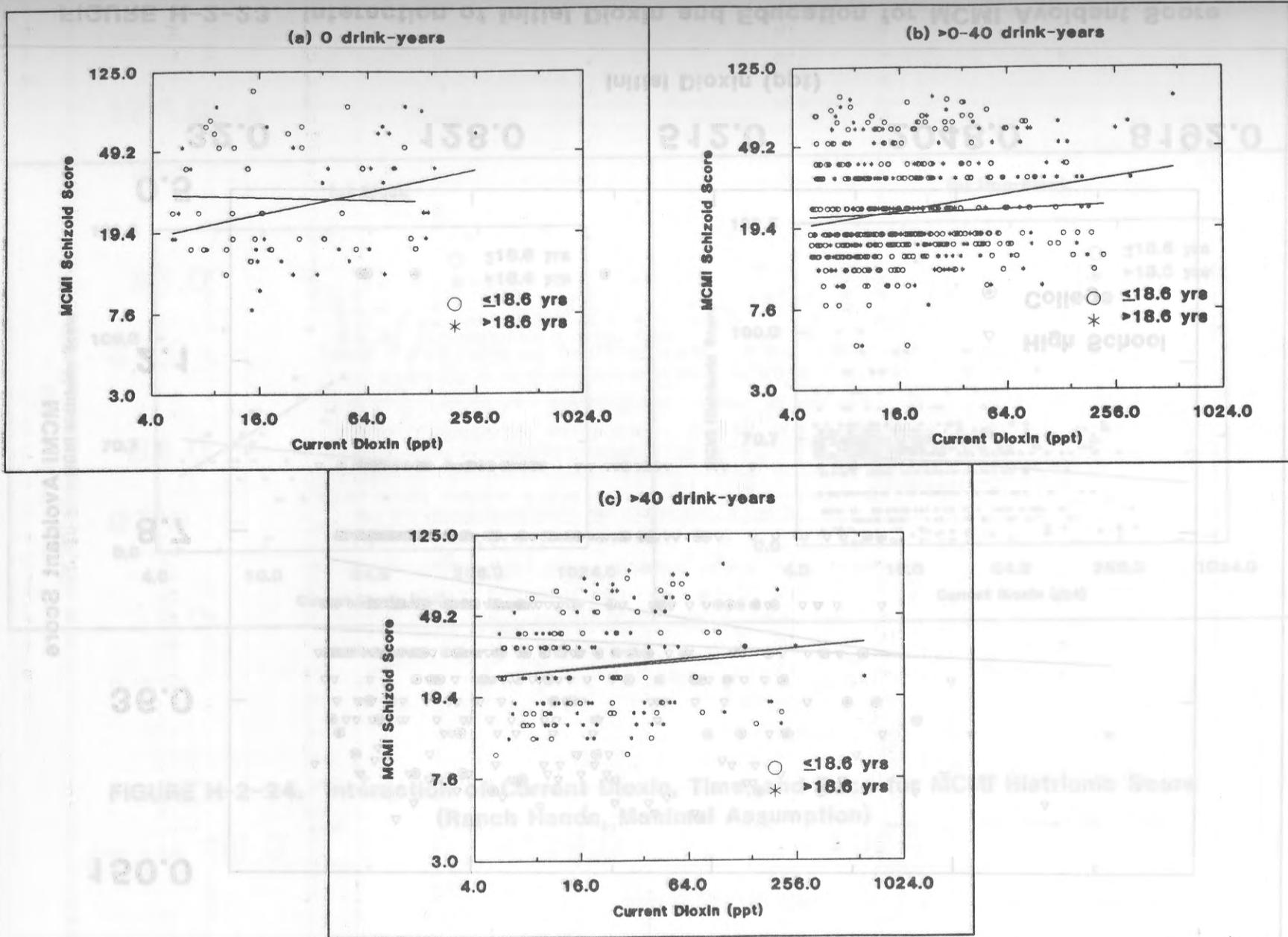
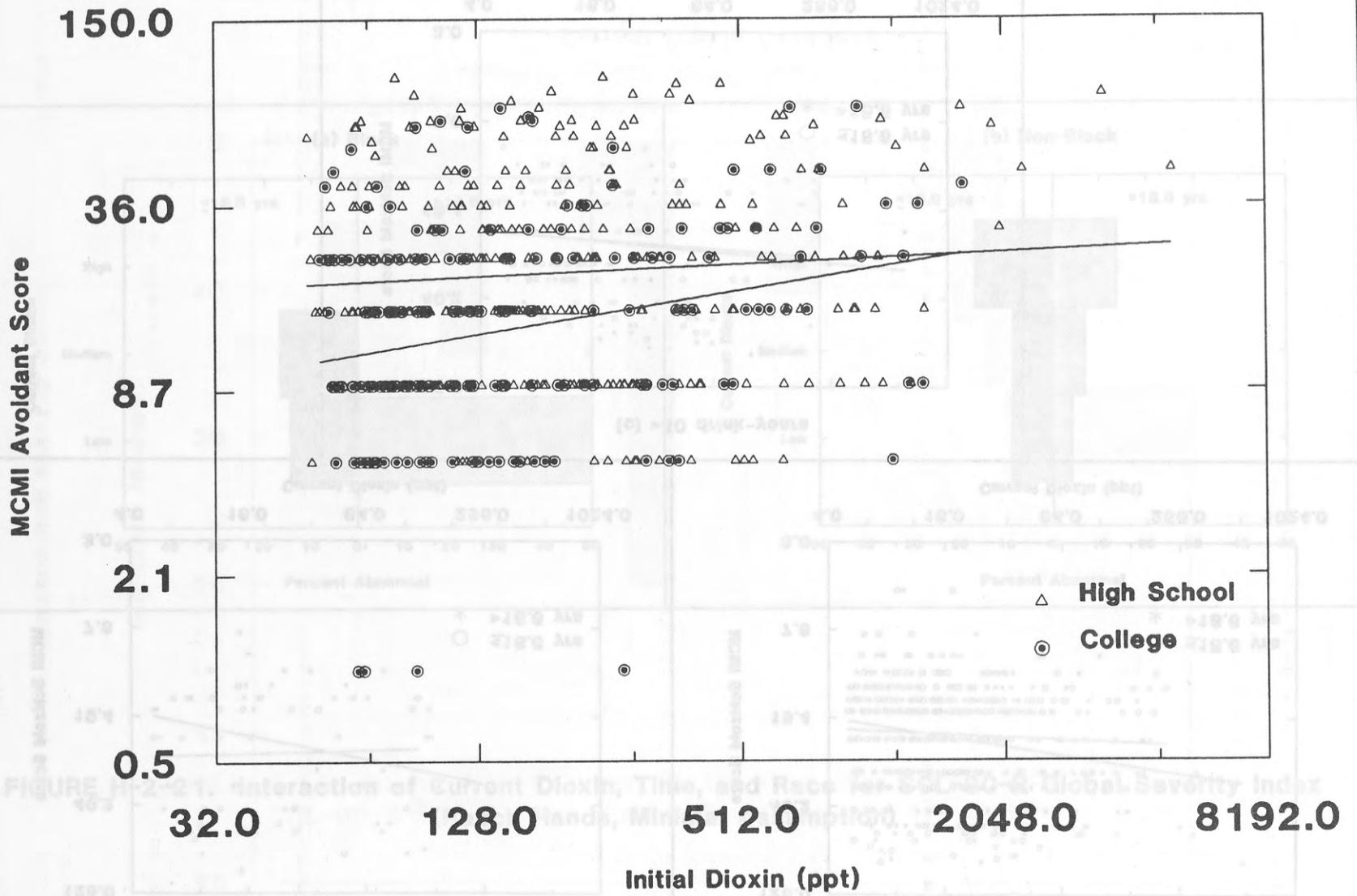


FIGURE H-2-21. Interaction of Current Dioxin, Time, and Race for SCL-90-R Global Severity Index (Ranch Hands, Minimal Assumption)

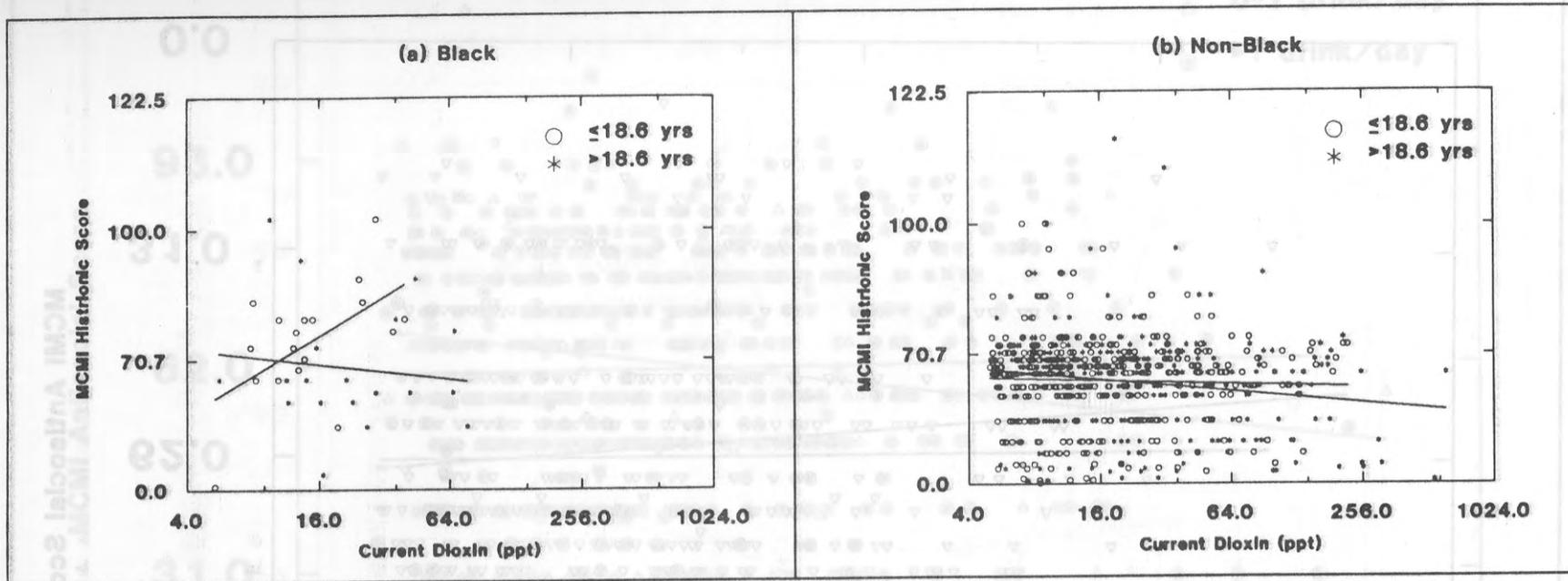


**FIGURE H-2-22. Interaction of Current Dioxin, Time, and Lifetime Alcohol History for MCMi Schizoid Score (Ranch Hands, Maximal Assumption)**

H-2-26



**FIGURE H-2-23. Interaction of Initial Dioxin and Education for MCMII Avoidant Score (Ranch Hands, Minimal Assumption)**



**FIGURE H-2-24. Interaction of Current Dioxin, Time, and Race for MCM1 Histronic Score (Ranch Hands, Maximal Assumption)**

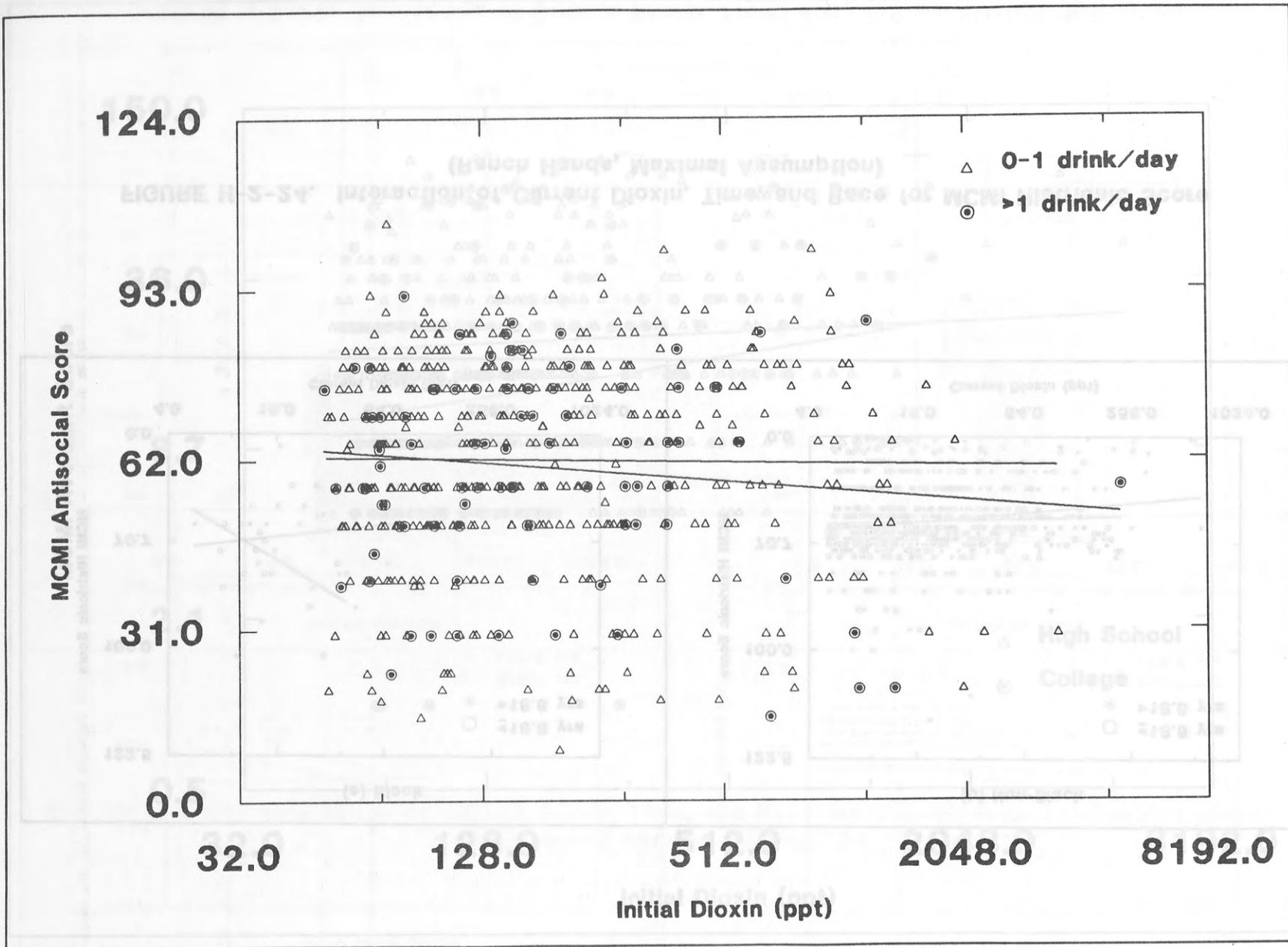
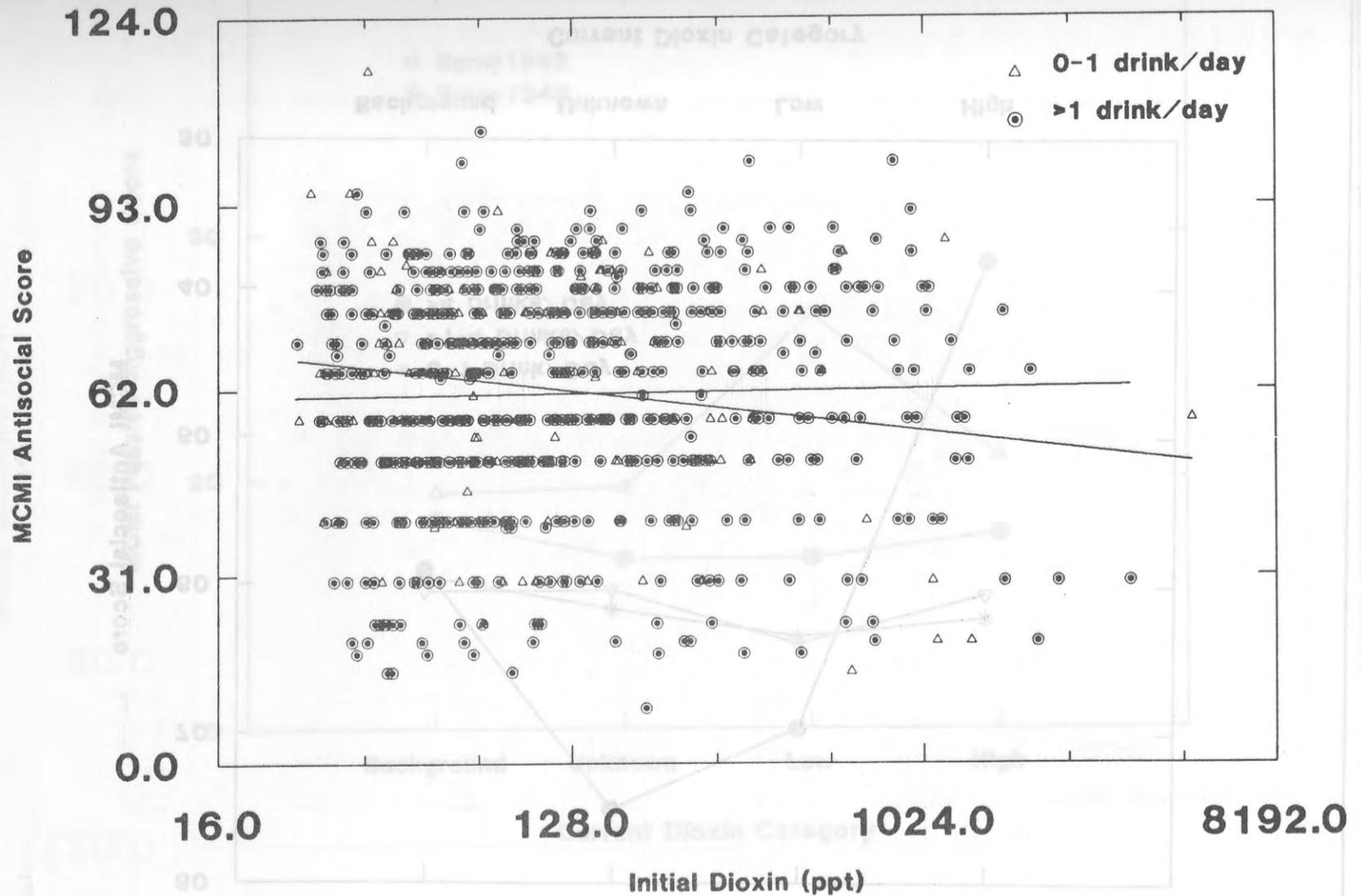


FIGURE H-2-25. Interaction of Initial Dioxin and Current Alcohol Use for MCMJ Antisocial Score (Ranch Hands, Minimal Assumption)



H-2-29

**FIGURE H-2-26. Interaction of Initial Dioxin and Current Alcohol Use for MCM1 Antisocial Score (Ranch Hands, Maximal Assumption)**

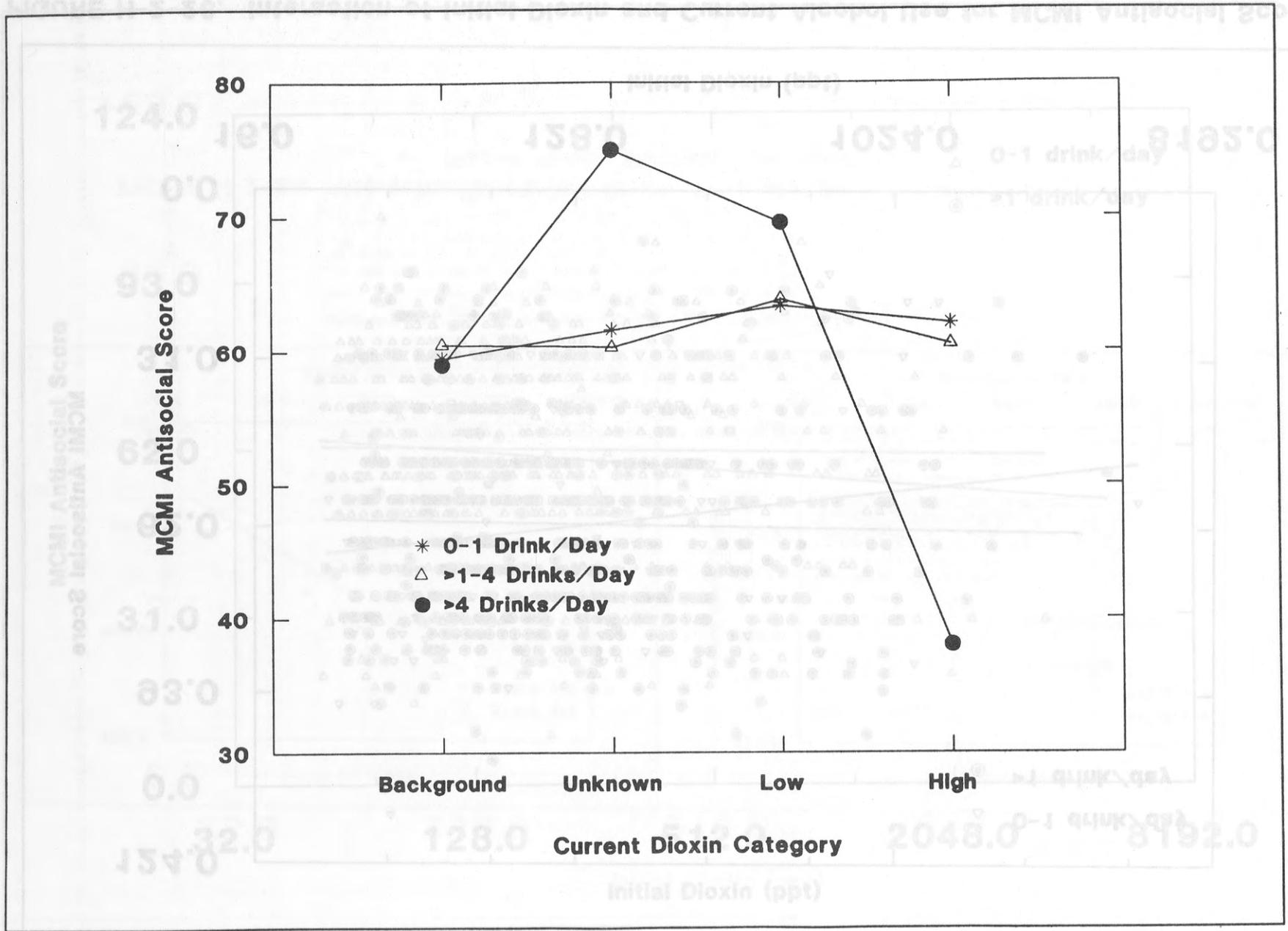
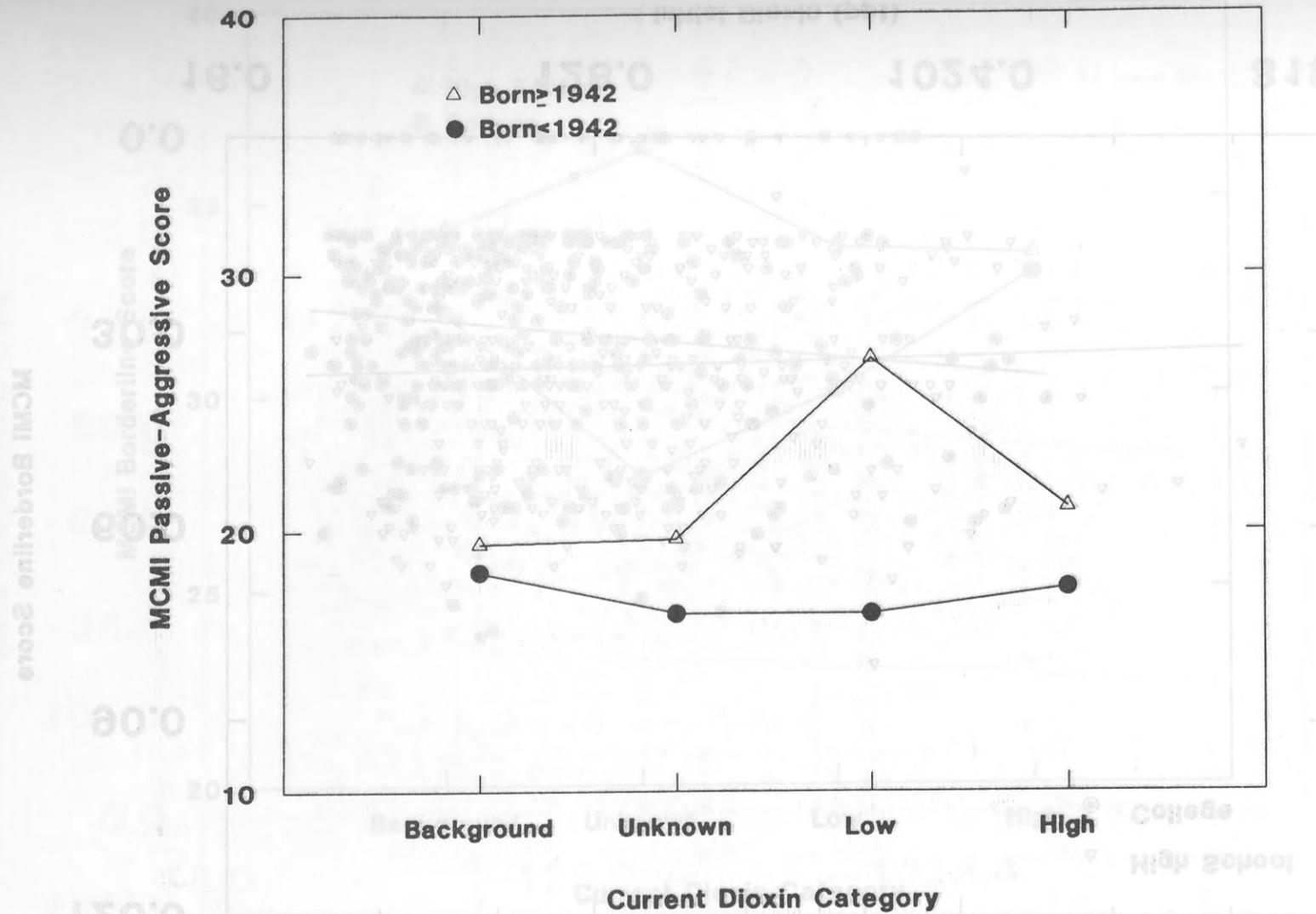
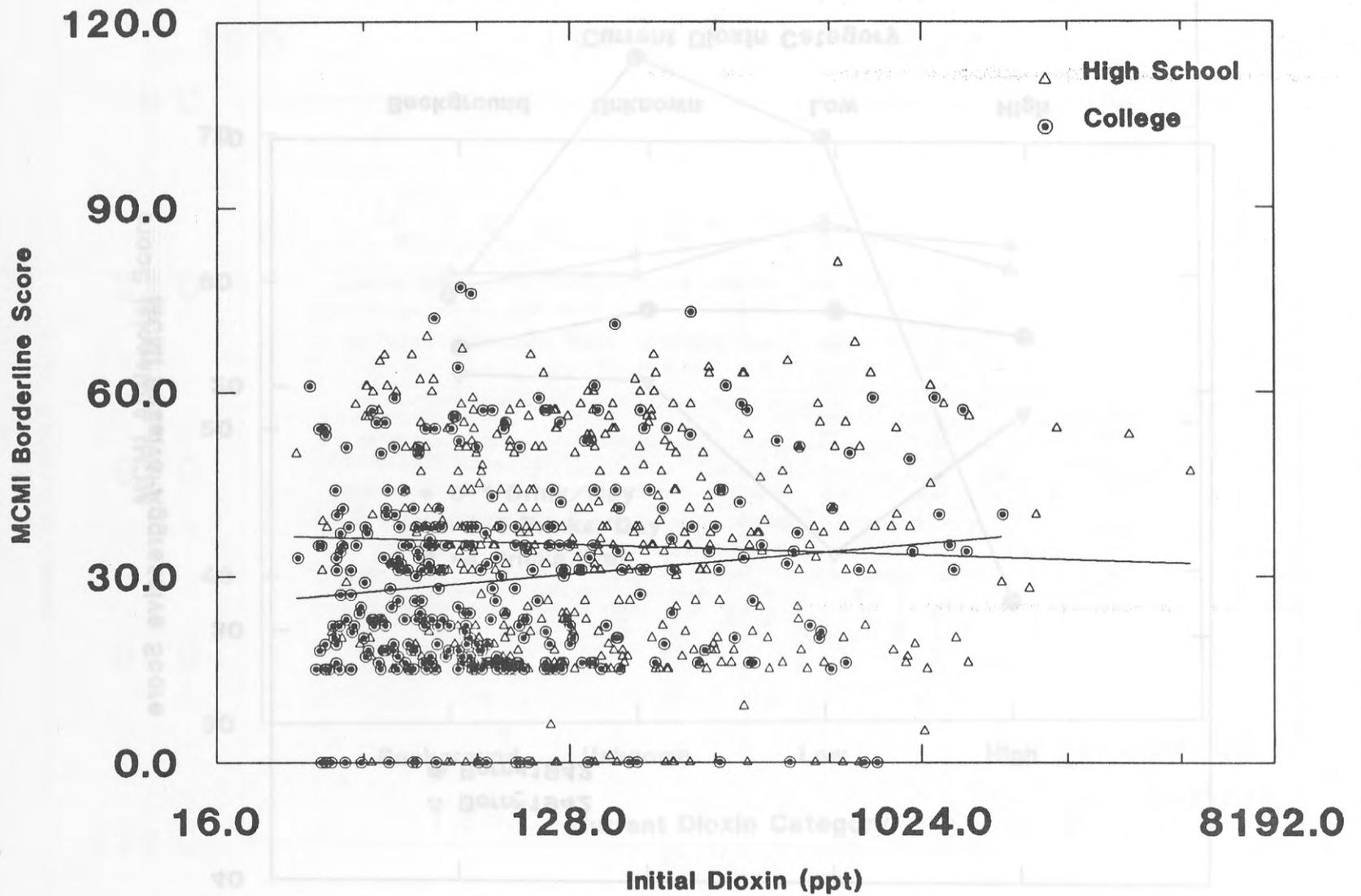


FIGURE H-2-27. Interaction of Categorized Current Dioxin and Current Alcohol Use for MCMII Antisocial Score



**FIGURE H-2-28. Interaction of Categorized Current Dioxin and Age for MCMCI Passive-Aggressive Score**

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H-2-31



**FIGURE H-2-29. Interaction of Initial Dioxin and Education for MCMC Borderline Score (Ranch Hands, Maximal Assumption)**

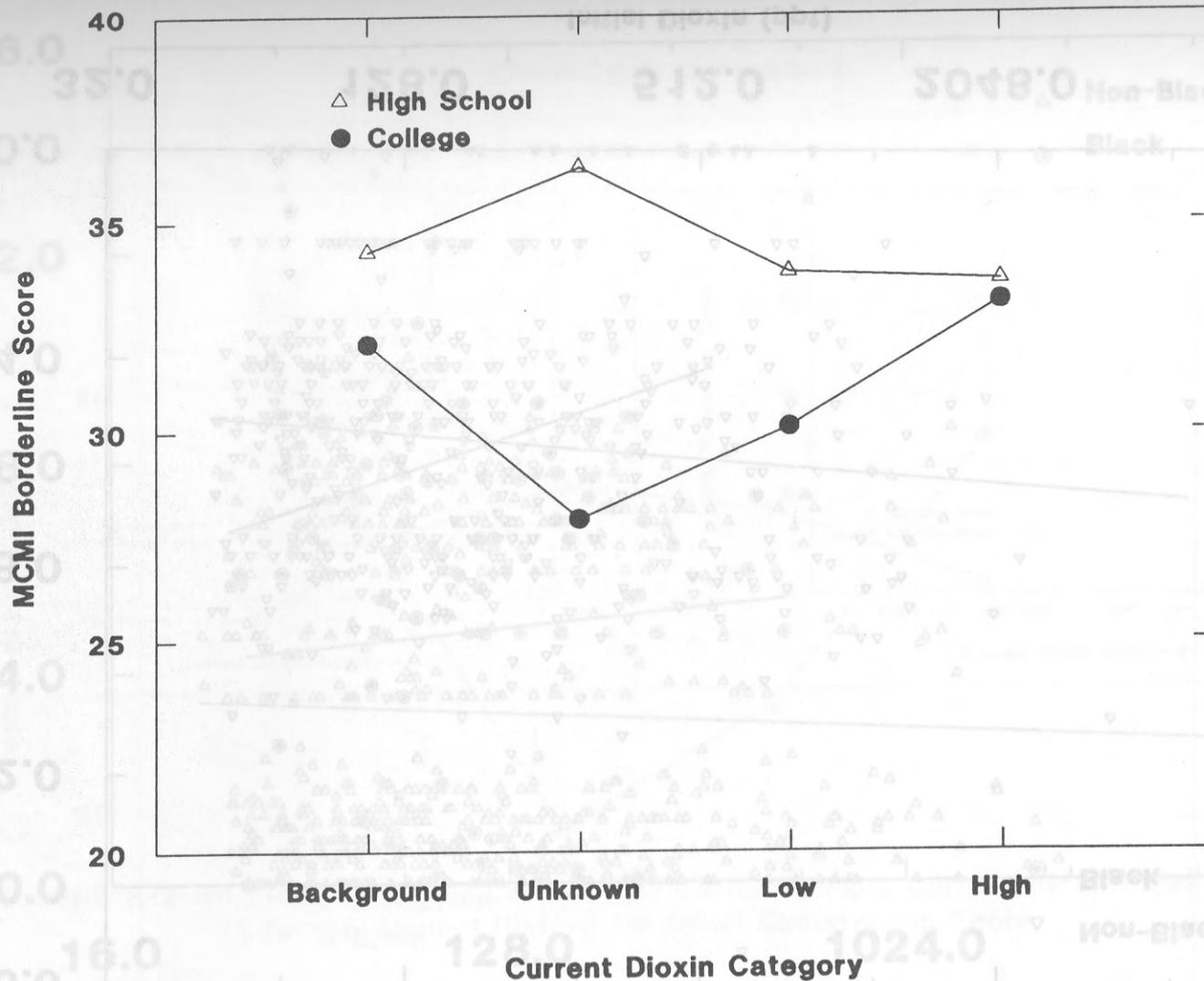


FIGURE H-2-30. Interaction of Categorized Current Dioxin and Education for MCM1 Borderline Score

H-2-34

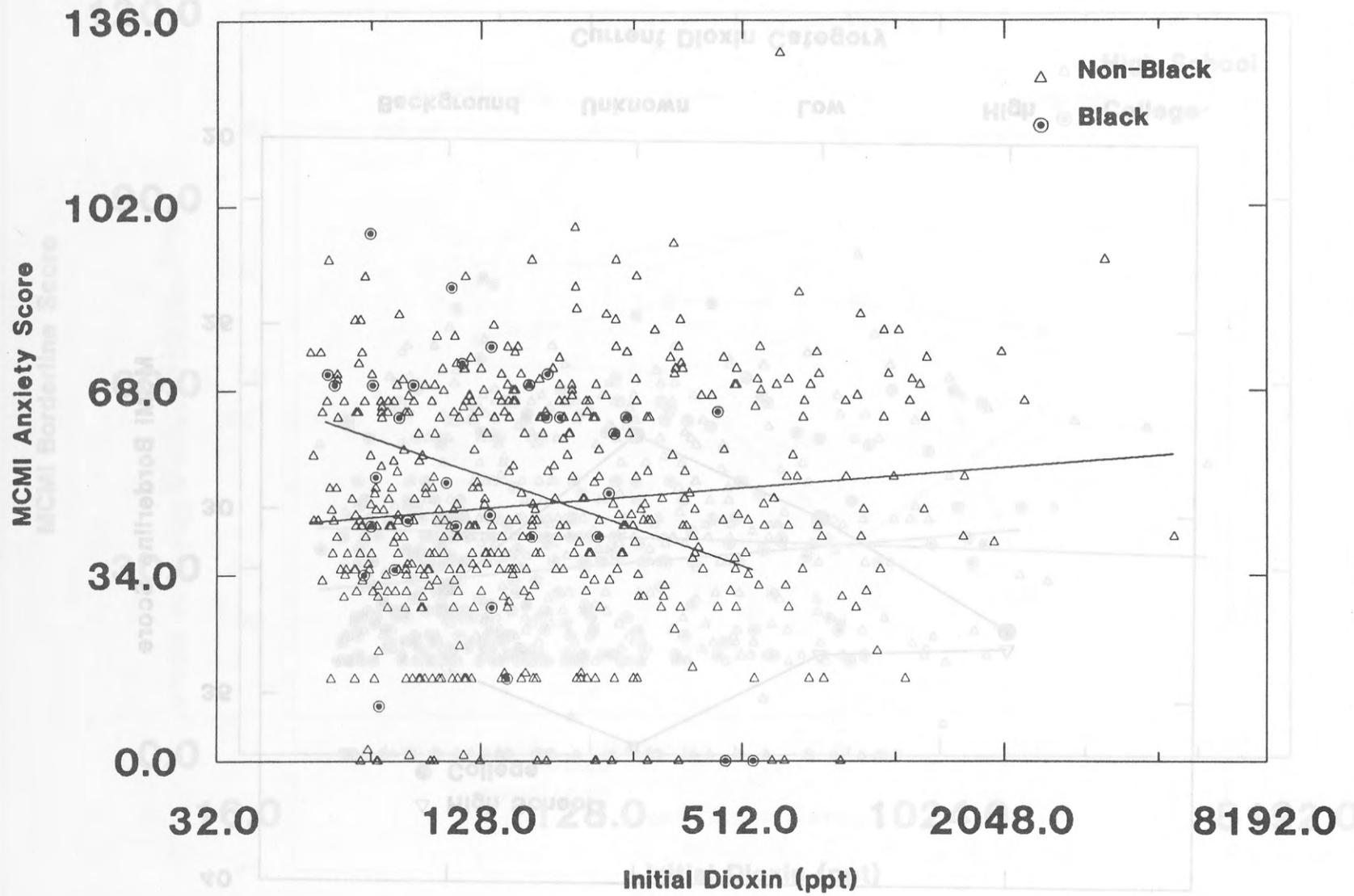
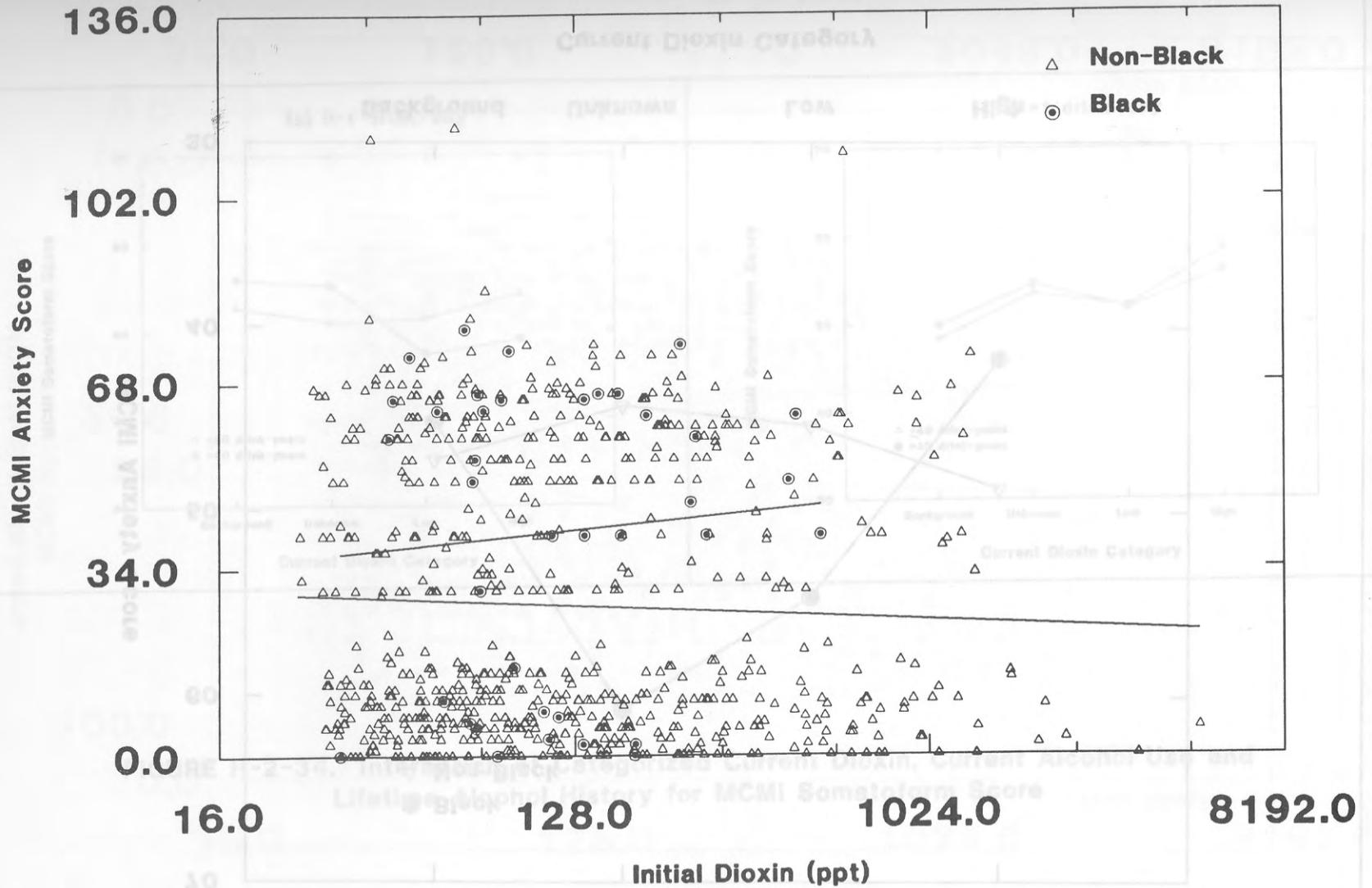


FIGURE H-2-31. Interaction of Initial Dioxin and Race for MCMII Anxiety Score (Ranch Hands, Minimal Assumption)



**FIGURE H-2-32. Interaction of Initial Dioxin and Race for MCMC Anxiety Score (Ranch Hands, Maximal Assumption)**

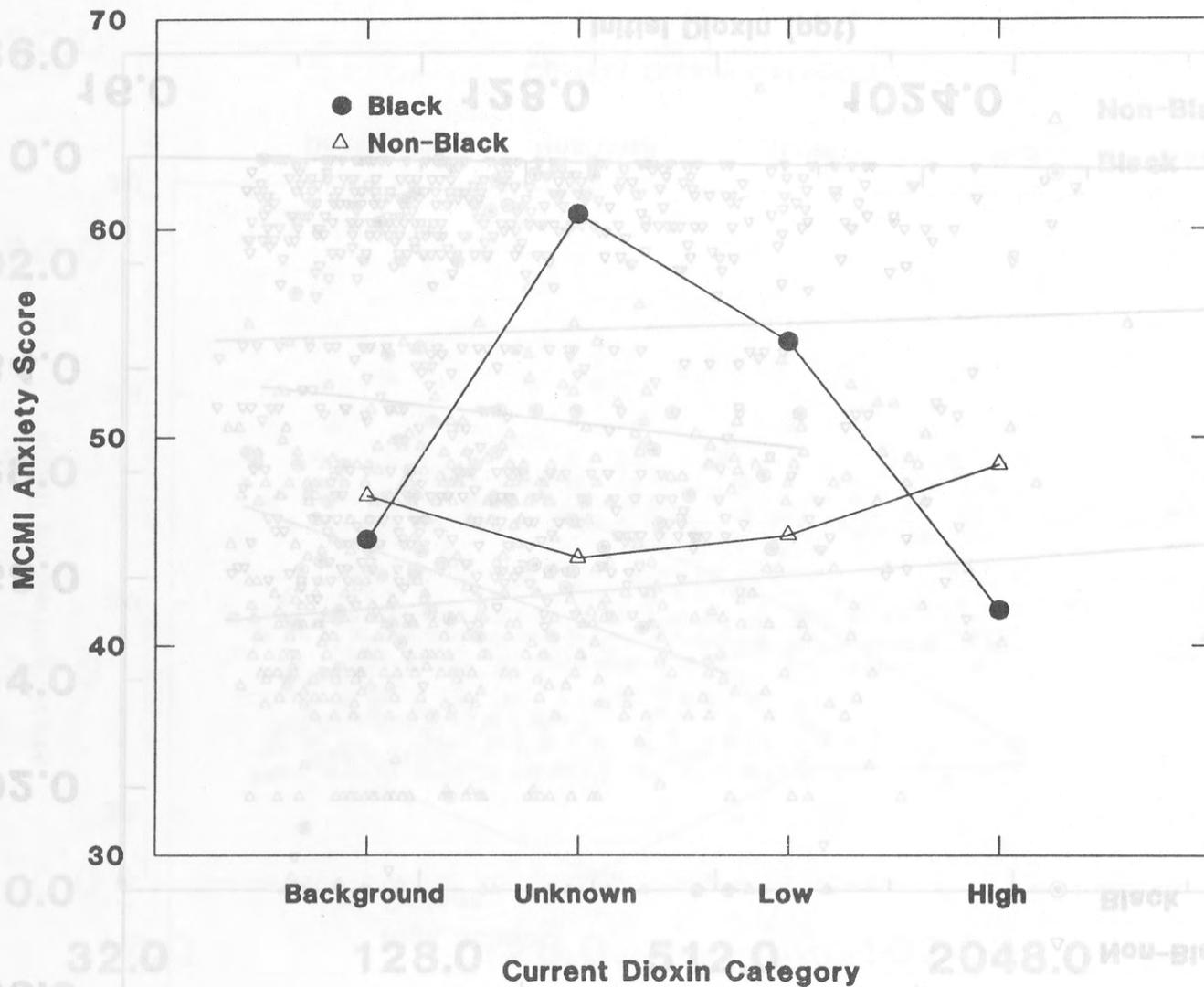


FIGURE H-2-33. Interaction of Categorized Current Dioxin and Race for MCMC Anxiety Score (Randomized Maximum Assumption)

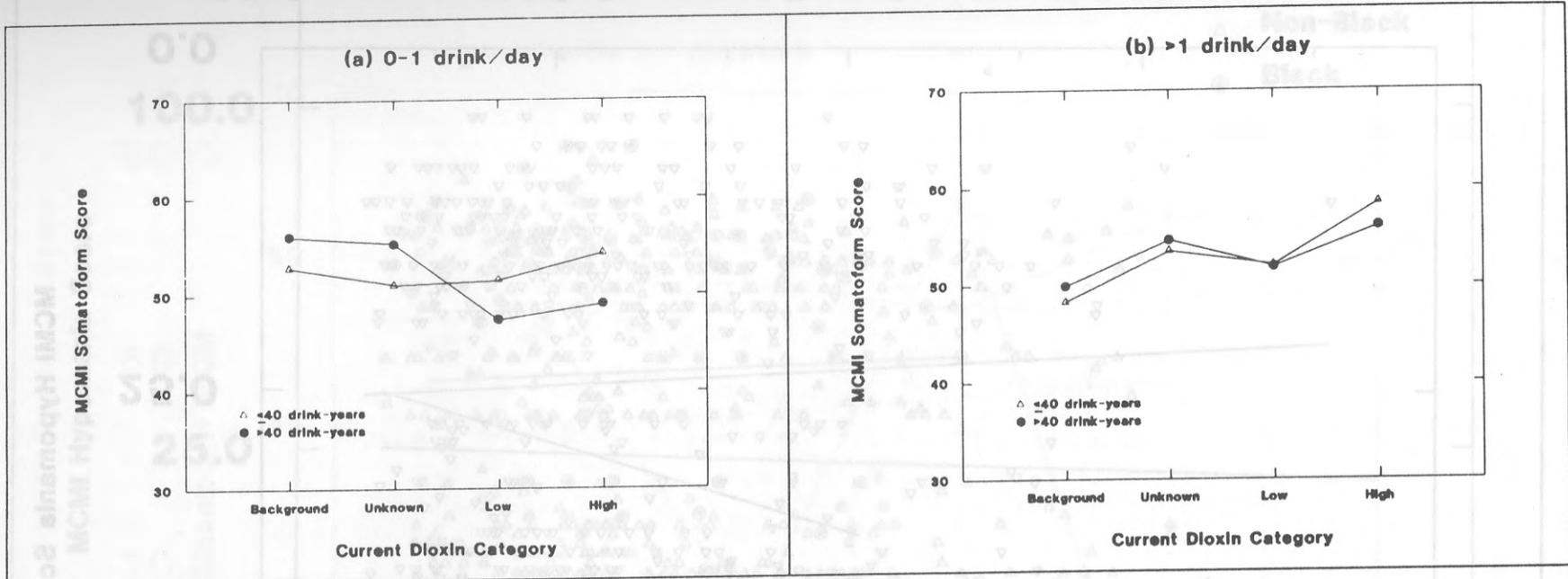
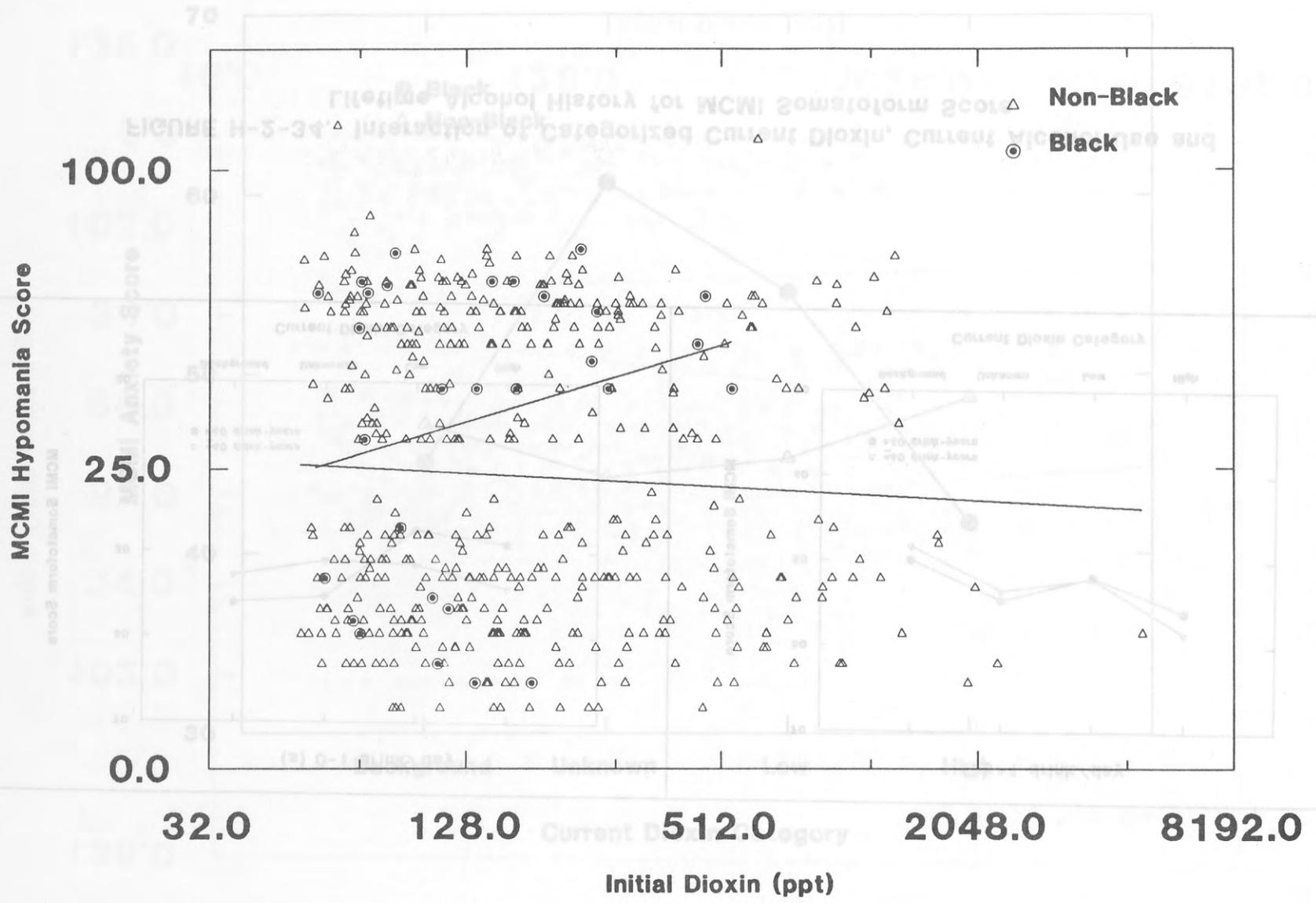


FIGURE H-2-34. Interaction of Categorized Current Dioxin, Current Alcohol Use and Lifetime Alcohol History for MCM1 Somatoform Score



**FIGURE H-2-35. Interaction of Initial Dioxin and Race for MCM I Hypomania Score (Ranch Hands, Minimal Assumption)**