DESCRIPTION OF SCANLAN'S RULE SUB-PAGES
(Jan. 2, 2011)

The **Scanlan's Rule** page[i] (about 11,500 words) addresses various nuances of the statistical patterns discussed in the references on the **Measuring Health Disparities** page. See Scanlan's Rule Outline and Guide. It has thirteen sub-page pages addressing particular issues. The **Employment Tests** sub-page explores whether, given the theories generally expressed on the Measuring Health Disparities and Scanlan's Rule pages, lowering a cutoff in fact reduces the disparate impact of a test in a meaningful way and explains why it does (assuming selection among persons who pass the test is not correlated with test scores). The **Case Study** sub-page uses a case study approach to illustrating some of the issues raised on the **Scanlan's Rule** page and its sub-pages and the **Case Study Answers** sub-page provides answers to the questions posed.

The **Subgroups Effects** sub-page discusses the way observers mistakenly identify subgroup effects on the basis of the way factors are associate with different proportionate changes in the rates of groups with different base rates without recognizing the extent to which the different proportionate changes are functions of the different base rates or that the group with the larger proportionate decrease in an outcome will tend to have the smaller proportionate increase in the opposite outcome. That is, just as lowering a cutoff will tend to decrease the failure rate proportionately more for the higher-scoring group while increasing the pass rate proportionately more for the lower-scoring group, a factor that reduces mortality will tend to reduce mortality proportionately more for the group with the lower base rate while increasing survival proportionately for the other group. The **Illogical Premises** sub-page, which is related to the **Subgroup Effects** sub-page, explains why it is illogical to regard it as somehow normal that two groups with different base rates should experience equal proportionate changes in an outcome rate (given that it is not possible for two groups with different base rates to experience equal proportionate changes in such rates while also experiencing equal proportionate changes in rates of experiencing the opposite outcome). The **Comparing Averages** sub-page explains why, irrespective of adjustment considerations, the issues discussed generally on the main **Scanlan's Rule** page affect comparisons of an average of outcome rates for more than one sub-group with another average of outcome rates for more than one sub-group. The **Meta-Analysis** sub-page briefly explains that factors that tend generally to undermine sub-group analyses similarly undermine meta-analyses of effects on dichotomous outcomes.

The **Explanatory Theories** sub-page addresses the way that researchers who believe they have identified a larger difference between rates in one setting than another may devise explanations for the perceived larger difference, usually without a sound basis for the perception that the difference is larger. The **Truncation Issues** sub-page, which is related to the **Cohort Considerations** sub-page of MHD, discusses why the patterns described in the introduction to the **Scanlan's Rule** page may vary when the populations examined are truncated portions of larger populations, as well as reasons why the Solutions approach on MHD is unsuitable in such circumstances. The **Representational Disparities** sub-page explains why it is not possible to appraise the size of a disparity solely on the basis of the proportions a group comprises of persons eligible to experience an outcome and of persons who experience the outcome. The **Case Control Studies** sub-page addresses a fundamental problem with case control studies in

that, while one may be able to derive an approximation of the relative risk from such study, one cannot derive the actual rates. The issue is related to that addressed in the **Representational Disparities** sub-page.

The **Feminization of Poverty** sub-page addresses the way that increases in the proportion of the population comprised by members of female-headed families are interpreted without recognition that decreases in the prevalence of an outcome will tend to cause groups particularly susceptible to the outcome to comprise a larger proportion of the population experiencing the outcome than they did previously as well as a larger proportion of the population failing to experience the outcome. The subject is also treated in the narrative portion of the **Scanlan's Rule** page (Sections B.1 and B.2) and many of the articles discussing the pattern whereby the rarer an outcome the larger tends to be the relative difference in experiencing it and the smaller tends to be the relative difference in avoiding it. The **Statistical Significance SR** sub-page explores whether, given that the same properties of normal distributions that underlie the patterns described on the **Scanlan's Rule** page underlie methods for calculating statistical significance, a test of statistical significance given unchanged population size would meet the key criterion for an effective measure of the size of difference between outcome rates (*i.e.*, that the measure remain unchanged when there occurs a change in overall prevalence akin to that effected by the lowering of a test cutoff) and shows why it does not.

(The Mortality and Survival sub-page had been an earlier version of what is now the Mortality and Survival page discussed below. It is retained solely to refer users of old links to the new page.)

The **Semantic Issues** sub-page discusses certain technical semantic issues that have some bearing on patterns described in the main Scanlan's Rule page.

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[i] In 2006, I began terming the pattern whereby the rarer an outcome the greater tends to the relative difference in experiencing it and the smaller tends to be the relative difference in avoiding it as "heuristic rule x" or "interpretive rule 1." In 2008, Bauld et al. (discussed in Section E.7 of MHD) termed the pattern "Scanlan's rule," which usage, somewhat modified. I have since employed for certain purposes.