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Re: Recommendation That ASA Explain to the President of the United States That Modifications of Practices That Generally Reduce Adverse Criminal Justice Outcomes Tend to Increase, Not Decrease, Relative Racial/Ethnic Differences in Rates of Experiencing the Outcomes and the Proportions Racial Minorities Make Up of Persons Experiencing the Outcomes

Dear President Utts and other Members of the Leadership of the American Statistical Association:

The principal purpose of this letter is to urge the American Statistical Association (ASA) to explain to President Barack Obama that statements the President recently made about racial/ethnic disparities in the criminal justice system and actions to address them reflect a belief about statistics that is the opposite of reality. In particular, on July 7, 2016, in a speech stressing the effects of racial disparities in criminal justice outcomes on African American mistrust of law enforcement, the President made statements reflecting a belief that certain modifications of criminal justice and sentencing practices will tend to reduce relative racial/ethnic differences in adverse criminal justice outcome and reduce the proportion racial minorities make up of persons experiencing such outcomes. Such belief is consistent with longstanding views and practices of the Department of Justice and other government agencies that have encouraged entities covered by civil rights laws to relax standards and otherwise reduce the frequency of adverse outcomes in order to reduce relative demographic differences in rates of experiencing those outcomes and the

proportions disadvantaged groups make up of persons experiencing the outcomes. It may also be the belief of a majority of statisticians and others analyzing demographic differences in criminal justice and other outcomes.

But, as I explained in an October 8, 2015 [letter](#)¹ to ASA leadership, the view is patently incorrect. Relaxing standards and otherwise reducing the frequency of adverse outcomes, while tending to reduce relative differences in rates of experiencing the corresponding favorable outcomes, tend to increase relative differences in rates of experiencing the adverse outcomes. As I also explained in the letter, relaxing standards and otherwise reducing the frequency of adverse outcomes, while tending to increase the proportions groups most susceptible to the outcomes make up of persons experiencing the corresponding favorable outcomes, tend also to increase the proportions such groups make up of persons experiencing the adverse outcomes.²

Section A of this letter discusses the pertinent statistical patterns with reference to the above-mentioned October 8, 2015 letter to ASA leadership. Section B discusses the President's recent statements about racial/ethnic disparities in criminal justice outcomes and actions to address those disparities, and explains that things the President believes will tend to reduce the differences he discusses in fact will tend to increase those differences.

A. The Pertinent Statistical Patterns

In my earlier letter to ASA leadership I explained that virtually all analyses of demographic differences involving dichotomous outcomes have been fatally undermined by failure to recognize patterns by which standard measures of differences between outcome rates (or between the proportions groups make up of persons potentially experiencing an outcome and the proportions they make up of persons actually experiencing the outcome) tend to be systematically affected by the prevalence (frequency) of an outcome. Such research can only be of value if it endeavors to determine the extent to which observed patterns of the comparative sizes of some measure of difference between outcome rates (or disproportionality) are functions of the effects of the prevalence of the outcome on the particular measure employed and the extent to which the patterns are reflective of something meaningful about the forces causing the

¹ To facilitate consideration of issues raised in letters such as this I include links to referenced materials in electronic copies of the letters. Electronic copies of the letters are available by means of the [Institutional Correspondence](#) subpage of the [Measuring Health Disparities](#) page of [jpscanlan.com](#). In this case, electronic copies of the letter are being emailed to the addressees and members of the Committee on Law and Justice Statistics and the Scientific and Public Affairs Advisory Committee. A link to the letter is also being posted on ASA Connect.

² The patterns turn on the prevalence (frequency) of an outcome (or, more precisely, the extent to which the outcome is restricted to those most susceptible to it) without regard to whether it is a favorable or an adverse outcome. I cast the issue in terms of the adverse outcome in the reference line to this letter and in much of the discussion because it is in circumstances where the focus is on adverse outcomes that the patterns are so widely misunderstood. As explained in the earlier letter (at 11), most people analyzing demographic differences understand that reducing the frequency of a favorable outcome tends to increase relative differences in rates of experiencing that outcome.

outcome rates to differ. And, with negligible exception, those analyzing demographic differences have never shown an awareness of that the measures they employ tend to be affected by the prevalence of an outcome.

The pattern most pertinent to the President’s statements that are the focus of this letter is that whereby the rarer an outcome the greater tends to be the relative difference in experiencing it and the smaller tends to be the relative difference in avoiding it. Consistent with this pattern, as rates of experiencing adverse outcomes like mortality, failure to receive appropriate healthcare, poverty, rejection of mortgage applications, suspensions from school, or arrest and imprisonment generally decrease, relative demographic differences in rates of experiencing those outcomes tend to increase while relative differences in the corresponding favorable outcomes tend to decrease. Similarly, relative differences in rates of experiencing adverse outcomes tend to be larger, while relative differences in rates of experiencing the corresponding favorable outcomes tend to be smaller, in areas or among subpopulations where the outcomes are comparatively common than in areas or among subpopulations where the outcomes are comparatively uncommon.

Another pattern that is of particular pertinence to the President’s statements is the pattern (a corollary to the pattern just described) whereby the rarer an outcome, the greater tend to be the proportions groups most susceptible to the outcome make up of persons experiencing the outcome and persons avoiding the outcome.

To facilitate readers’ grasp of the key points of this letter I set out immediately below Table 1 from the earlier ASA letter (at 11), which illustrates both patterns described above. The table, which is based on a situation where the means of normally distributed tests scores of an advantaged group (AG) and a disadvantaged group (DG) differ by half a standard deviation and the distributions have the same standard deviation, shows the effects on various measures of lowering a test cutoff from the point where 80 percent of AG passes to a point where 95 percent of AG passes.

Table 1. Illustration of effects on relative differences in pass and fail rates of lowering a cutoff from a point where 80% of AG passes to a point where 95% of AG passes, with proportions DG makes up of persons who pass and of persons who fail (when mean scores differ by approximately half a standard deviation and DG comprises 50% of test takers)

Cutoff	AG Pass	DG Pass	AG Fail	DG Fail	AG/DG Pass Ratio	DG/AG Fail Ratio	DG Prop of Pass	DG Prop of Fail
High	80%	63%	20%	37%	1.27	1.85	44%	65%
Low	95%	87%	5%	13%	1.09	2.60	48%	72%

The table, which is discussed at pages 10-12 of the earlier letter, shows how lowering a test cutoff, and thereby increasing overall pass rates and reducing overall failure rates, decreases

the relative difference in the increasing outcome (test passage) and increases the relative difference in the decreasing outcome (test failure). The figures most pertinent to the main subject of this letter are those in the third last column, which show that lowering the cutoff increases the ratio of DG's failure rate to AG's failure rate from 1.85 to 2.60 (*i.e.*, increases the relative difference from 85 percent to 160 percent). The final two columns also show how lowering the cutoff increases the proportions DG makes up of persons who pass the test and persons who fail the test.³

The table reflects the same hypothetical as Table 1 of my "[Race and Mortality Revisited](#)," *Society* (July/Aug. 2014), which discusses the broader implications of the pervasive failure to understand patterns by which measures tend to be affected by the prevalence of an outcome.⁴ The same hypothetical underlies my "[Misunderstanding of Statistics Leads to Misguided Law Enforcement Policies](#)," *Amstat News* (Dec. 2012), which discusses the way federal government policies relating to fairness in lending and school discipline have been based on the mistaken belief that relaxing standards would tend to reduce relative differences in adverse borrower and school discipline outcomes. The hypothetical also underlies my recent "[Things DoJ doesn't know about racial disparities in Ferguson](#)," *The Hill* (Feb. 22, 2016), which discusses the Department of Justice's mistaken belief that the aggressiveness of policing practices and the harshness of court procedures in Ferguson, Missouri caused African Americans to make up a higher proportion of persons experiencing adverse interactions with the city's police and the courts than would be the case with less aggressive policing practices and less harsh court procedures. Actions of the federal civil rights enforcement agencies regarding lending and school discipline practices, as well as Department of Justice actions regarding police and court practices of Ferguson, Missouri – which all involve an understanding of key statistical issues on the part of the government that is the opposite of reality, with the consequence that entities that comply with government encouragements to generally reduce adverse outcomes tend to increase the chances the government will sue them for discrimination – were given much attention in the earlier letter.

³ The positing of the situation where DG comprises 50 percent of test takers is solely for illustrative purposes. The pattern of the effect of the frequency of the outcome on the proportions DG makes up of persons experiencing and avoiding the outcome holds regardless of the proportion DG makes up of the persons potentially experiencing the outcome (the pool). But for any given pair of outcome rates, the proportion DG makes up of the pool affects relative and absolute differences between that proportion and the proportion DG makes up of persons experiencing the adverse outcome, though in different ways. For any given pair of rates, the larger the proportion DG makes up of the pool, the smaller will be the relative difference between that proportion and the proportion DG makes up of persons experiencing the outcome. On the other hand, as the proportion DG makes up of the pool increases from being very low to being very high, the absolute differences will increase for a time and then decrease. See Table 2 of the [IDEA Data Center Disproportionality Guide](#) subpage of the [Discipline Disparities](#) page of [jpscanlan.com](#). But, as also discussed on that subpage, there are several problems with measures of differences between the proportion DG makes up of the pool and the proportion it makes up of persons experiencing an outcome apart from the fact that the latter proportion tends to be affected by the frequency of the outcome.

⁴ The specifications for the table are also the same as those underlying Table 1 and Figure 1 of my "[Divining Difference](#)," *Chance* (Fall 1994).

An illustration of the effects of restricting an outcome to those most susceptible to the outcome similar to that in Table 1, but using income data, may be found in Table 1 of my guest editorial "[Can We Actually Measure Health Disparities?](#)," *Chance* (Spring 2006) (which, with respect to the effects of reducing poverty, may be presented more clearly in Table 2 (at 330) of "Race and Mortality Revisited"⁵). Many other illustrations may be found in materials referenced in the earlier letter.

As I explained in the earlier letter, while few people understand that restricting an adverse outcome to those most susceptible to it tends to increase relative differences in rates of experiencing it (and the proportions disadvantaged groups make up of persons experiencing it) – and a great many people analyzing demographic differences in fact believe the opposite – the existence of the patterns just described is hardly debatable.

In the October 8, 2015 letter, I urged ASA leadership to (a) form a committee to explore the ways analyses by statisticians and others of demographic and other differences in outcome rates are fatally undermined as a result of the failure to recognize patterns by which standard measures of differences between outcome rates tend to be systematically affected by the frequency of an outcome and (b) explain to various arms of the government that reducing the frequency of an outcome tends to increase relative differences in rates of experiencing the outcome. I noted that while it could take some time for ASA to implement fully the first recommendation (and for the committee to accomplish its tasks), ASA should be able to act quickly regarding the second recommendation. I have been advised that the matter has been referred to a subcommittee of the Scientific and Public Affairs Advisory Committee and have periodically provided additional information to the Chair of the Committee.

I will at some point be writing ASA a letter different from this letter to address recent developments that are pertinent to both of the October 8, 2015 letter's recommendations, while possibly proposing interim guidance for ASA leadership to issue to the organization's members or others. Such developments include ASA's March 2016 issuance of a statement on p-values and its June 2016 signing of a consensus letter on global warming, actions that reflect the organization's assuming a larger role in educating and influencing the public and policy makers on matters as to which a sound understanding of statistics is crucial. The developments also include recent publication of guides on the measurement of health and healthcare disparities by scientists or statisticians from the Centers for Disease Control and Prevention and the National Center for Health Statistics, which are discussed in my recent "[The Mismeasure of Health Disparities](#)," *Journal of Public Health Management and Practice* (July/Aug. 2016). They also

⁵ The discussion in "Race and Mortality Revisited" (at 329,343) regarding its Table 2 ought to make clear that there is no value whatever in discussing changes in demographic differences in poverty rates during periods of general changes in poverty without consideration of the extent to which observed patterns are functions of the overall change in the prevalence of poverty. It should be evident that the underlying point applies to the study of demographic differences in any outcome.

include the issuance by research groups of reports on demographic differences, two of which are the subject of my letters to [Stanford Center on Poverty and Inequality](#) (Mar. 8, 2016) and [New York City Center for Innovation Through Data Intelligence](#) (June 6, 2016).⁶ All studies of demographic differences that, like those that are subjects of the two letters just mentioned, fail to reflect an understanding of the patterns by which measures tend to be affected by the prevalence of an outcome may be deemed pertinent developments. And that would likely include essentially all studies of demographic differences in outcome rates issued since the earlier letter, just as it included all studies of demographic differences in outcome rates issued prior to the earlier letter.⁷

This letter, however, is limited to the second recommendation of the earlier letter, especially as the subject of the recommendation bears on the President's recent attention to racial/ethnic disparities in criminal justice outcomes. Developments (apart from the President's statements) that are particularly pertinent to this matter include the Department of Justice's February 2016 filing of a suit against the City of Ferguson, Missouri, which was based on the same misunderstanding of statistics reflected in the Department's March 2015 report discussed in the earlier ASA letter (see the above-mentioned "[Things DoJ doesn't know about racial disparities in Ferguson](#)," *The Hill* (Feb. 22, 2016)), and the April 2016 entry of a consent decree in the case. The decree requires monitoring of racial disparities in criminal justice outcomes and police employment outcomes. It also requires that, both as to criminal justice outcomes and employment outcomes, the City must implement less discriminatory alternatives to practices

⁶ Like the letters to institutions and organizations listed at pages 4-5 of the October 8, 2015 letter, all recent letters provide insight into the general failure of those analyzing demographic differences to understand the patterns by which measures tend to be affected by the prevalence of an outcome. Other letters since October 8, 2015, include those to [Federal Judicial Center](#) (July 7, 2016), [University of Oregon Institute on Violence and Destructive Behavior and University of Oregon Law School Center for Dispute Resolution II](#) (July 5, 2016), [University of Oregon Institute on Violence and Destructive Behavior and University of Oregon Law School Center for Dispute Resolution](#) (July 3, 2016), [New York City Center for Innovation Through Data Intelligence](#) (June 6, 2016), [Consortium of Social Science Associations](#) (Apr. 6, 2016), [Population Association of America and Association of Population Centers](#) (Mar. 29, 2016), [Council of Economic Advisers](#) (Mar. 16, 2016), [City of Madison, Wisconsin](#) (Mar. 12, 2016), [Stanford Center on Poverty and Inequality](#) (Mar. 8, 2016), [City of Boulder, Colorado](#) (Mar. 5, 2016), [Houston Independent School District](#) (Jan. 5, 2016), [Boston Lawyers' Committee for Civil Rights and Economic Justice](#) (Nov. 12, 2015), [House Judiciary Committee](#) (Oct. 19, 2015).

⁷ Examples of other recent actions by the government or its contractors that might be deemed pertinent to either of the recommendations in the earlier letter include the following: In January 2016, the IDEA Data Center issued a [User's Guide for the Spreadsheet Application for Calculating Disproportionality Measures \(Revised\)](#) for implementing the guidance for measuring disproportionality in special education discussed on the [IDEA Data Center Disproportionality Guide](#) subpages of the [Discipline Disparities](#) page of [jpscanlan.com](#). In February 2016, the Office of Special Education and Rehabilitative Services of the Department of Education issued a report titled "[Racial and Ethnic Disparities in Special Education Programs: A Multi-Year Disproportionality Analysis by State, Analysis Category, and Race/Ethnicity](#)". In March 2016 the Department of Education issued a [proposed rule](#) on measuring disproportionality in disciplining students with disabilities and in assignment to special education. In April 2016, the Government Accountability Office issued a report titled "[K-12 Education: Better Use of Information Could Help Agencies Identify Disparities and Address Racial Discrimination](#)". None of these documents reflects an awareness of the relationship of the prevalence of an outcome to the measures they discuss.

causing a disparate impact as to matters that are sometimes cast in favorable terms and sometimes cast in adverse terms. See my [Submission re Ferguson Consent Decree](#) (Apr. 11, 2016). There is little prospect that anyone involved with attempting to comply with, or to monitor, the decree will understand that modifications to practices that reduce adverse outcomes, while increasing the corresponding favorable outcomes, will tend to reduce relative racial differences for matters cast in terms of favorable outcomes but increase relative differences for matters cast in terms of adverse outcomes (and increase the proportions African Americans make up of persons experiencing the adverse outcomes).

The misunderstanding of statistics reflected in the Department of Justice's actions regarding Ferguson will no doubt be reflected in its actions regarding other communities, as well as in attention to racial differences in criminal justice outcomes in other communities by public interest groups and by the communities themselves. See my letter to the [City of Minneapolis, Minnesota](#) (June 8, 2015) referenced in the October 5, 2015 letter and my recent letters to [City of Boulder, Colorado](#) (Mar. 5, 2016) and [City of Madison, Wisconsin](#) (Mar. 12, 2016).⁸

Thus, there are numerous illustrations of the continuation of the longstanding pattern where important federal law enforcement policies, and actions of others that are informed by those policies, are based on expectations of the consequences of policies that are the opposite of what those consequences are likely to be.

B. The President's Statements About Racial/Ethnic Disparities in Criminal Justice Outcomes and Action to Reduce Them and the Misunderstanding of Statistics Reflected in Those Statements

On July 7, 2016, in a speech on police shootings of African American men by police in Louisiana and Minnesota, President Obama discussed the contribution of racial disparities in the criminal justice system to African American mistrust of law enforcement. Statistics the President cited included that African Americans are 30 percent more likely to be pulled over than whites and African Americans and Hispanics who are pulled over are three times as likely to be

⁸ Virtually all actions the Department of Education has taken with regard to school discipline may be deemed subsequent developments that are highly pertinent to the recommendation that ASA explain to the federal government that generally reducing discipline rates will tend to increase relative differences in discipline rates and the proportions African Americans and other disadvantaged groups make up of students disciplined. One example may be found in the [agreement](#) the Department of Education reached in April 2016 with the Oklahoma City School District. As reflected in the Department of Education's [press release](#), the agreement requires a range of actions to reduce exclusionary discipline to the greatest extent possible. At the same time the agreement requires such actions, with their tendency to increase standard measures of racial differences in exclusionary discipline, it requires extensive monitoring of racial differences in exclusionary discipline with a focus on elimination of such differences. The agreement (at 18) also requires that Oklahoma City School District compare its data with that of other districts for purposes of identifying racial disparities. It is doubtful that those charged with making such comparisons will recognize the reasons to expect the Oklahoma City School District to show greater disparities as they are commonly measured than districts not under requirements to restrict exclusionary discipline to only the most extreme cases.

searched as whites;⁹ last year African Americans were twice as likely to be shot by police or arrested as whites; African Americans who are arrested are 75 percent more likely than whites to be charged with sentences carrying mandatory minimums; while African Americans and Hispanics make up 30 percent of the general population, they make up over half of the incarcerated population.

The President observed, however, that modifications of practices can address such disparities and discussed an expert task force he had convened that had carefully reviewed pertinent data and provided a range of recommendations to improve policing. The President also approvingly cited sentencing reforms being considered in Congress.

The President has since encouraged a dialogue on racial disparities in the criminal justice system, and Vice President Joseph Biden, in a July 9, 2016 [briefing](#), called for all Americans to speak out about racial disparities in the criminal justice system.

Whether or not the President's is deemed to have explicitly stated that general reforms to the criminal justice system should reduce relative racial/ethnic differences in adverse criminal justice outcomes, and reduce the proportion racial minorities make up of persons experiencing those outcomes, such is clearly the expectation reflected in the President's remarks. That is particularly evident when the President's remarks are read in the context of the longstanding policies of the Department of Justice regarding lending and school discipline issues, as well as its recent actions regarding criminal justice issues in Ferguson, Missouri that are based precisely on that expectation.

As explained above and in the earlier letter, however, the reality is the exact opposite of that expectation. To the extent that general improvements in police practices generally reduce rates of adverse interactions with the police and courts and sentencing reform generally reduces rates of incarceration, the statistically sound expectation is that both relative racial/ethnic differences in adverse criminal justice outcomes and the proportion racial minorities make up of persons experiencing those outcomes will tend to increase.

Reforms of police practices do not have to increase relative racial/ethnic differences in adverse criminal justice outcomes or the proportions racial minorities make up of persons experiencing them. If racial bias plays an important role in racial/ethnic differences in outcome rates and reforms reduce racial bias, all measures of racial disparity should decrease. Race-conscious action aimed at reducing differences in outcome rates irrespective of any role of racial

⁹ The President actually said "three times more likely," which technically means 300 percent more likely, though the President presumably meant 200 percent more likely. The usage by the President, however, is no more reflective on imprecision on the part of the President or advisors drafting the remarks than it is on the imprecision of the legions of scholars who principally employ such usage (*i.e.*, "times more likely," "times higher," *etc.* rather than "times as likely," "times as high," *etc.*) in scientific journals. See the [Times Higher](#) subpage of the [Vignettes](#) page of [jpscanlan.com](#). But I want to avoid either repeating the incorrect usage or seeming to mischaracterize the President's statement.

bias in those differences will have similar effects. Modifications of policies that affect the types of crimes for which laws are aggressively enforced or that affect areas of enhanced police presence or aggressive law enforcement could affect racial differences in outcomes in various ways, including ways that reduce all measures of racial disparity. But reforms that, by adding circumspection and procedural controls to police conduct, merely lead to the general reduction in adverse outcomes will tend to increase relative differences in adverse outcomes and the proportions more susceptible groups make up of persons experiencing those outcomes in the same way that lowering test cutoffs tend to increase relative difference in failure rates and the proportions disadvantaged groups make up of persons who fail. For example, raising the threshold for the use of force (lethal or otherwise) and requiring considerations of alternatives to lethal force (such as recommended in the [report](#) (at 37) of the President's Task Force on 21st Century Policing) should increase relative racial/ethnic differences in being subject to force and lethal force and the proportions racial minorities make up of persons experiencing those outcomes. And the effect of the prevalence-related patterns often will be sufficient to increase the measures of disparity commonly employed by the government even when there have occurred genuine reductions in the strength of the forces causing outcome rates of racial minorities and whites to differ.

The same points hold for sentencing reforms being considered in Congress that are aimed at generally reducing the size of the prison population. The ways reforms pertain to different types of crimes may play into the actual results in various ways. But there remain statistical reasons to believe that generally reducing the size of the prison population will tend to increase relative racial/ethnic differences in incarceration rates and the proportions racial minorities make up of those incarcerated.¹⁰

Instructive with respect to probable end results of actions that generally reduce adverse outcomes in circumstances where there exist issues as to whether bias plays some role in outcome differences are the commonplace situations where in recent years general reductions in school discipline rates have been accompanied by increased relative racial/ethnic differences in discipline rates. Such situations are discussed on the following subpages of the [Discipline Disparities](#) page of [jpscanlan.com](#) (with jurisdictions indicated in the titles): [California Disparities](#), [Colorado Disparities](#), [Connecticut Disparities](#), [Maryland Disparities](#), [Minnesota Disparities](#), [Oregon Disparities](#), [Beaverton, OR Disparities](#), [Denver Disparities](#), [Henrico County, VA Disparities](#), [Los Angeles SWPBS](#), [Minneapolis Disparities](#), [Montgomery County, MD Disparities](#), [Portland, OR Disparities](#), [St. Paul Disparities](#). Such patterns are being observed notwithstanding that, in addition to lowering discipline standards and otherwise generally

¹⁰ The President also stated that African Americans receive sentences that are almost 10 percent longer than comparable whites charged with the same crimes. The measurement issues addressed here and in the earlier letter directly pertain only to dichotomous outcomes and not in evident ways to genuinely continuous outcomes. Very often, however, difference in continuous outcomes are wholly or partly functions of differences in dichotomous outcomes. In such circumstances, it is difficult to divine the likely effect of changes in the prevalence of the dichotomous outcome on differences in the continuous outcome. See my 2006 British Society for Populations Studies paper "[The Misinterpretation of Health Inequalities in the United Kingdom](#)," (at 6-7), and 2013 University of Kansas School of Law Faculty Workshop paper "[The Mismeasure of Discrimination](#)" (Addendum).

reducing discipline rates, most of the jurisdictions are likely doing other things to attempt to reduce racial differences in discipline outcomes.

The important thing is that those addressing outcome disparities understand the pertinent statistical patterns. And, while few understand the patterns, many have conceptions about the statistical effects of reducing adverse outcomes that are the opposite of reality. In that regard it is useful to consider the points I made in "[Mired in Numbers](#)," *Legal Times* (Oct. 12, 1996), that changing a three-strikes rule to a four-strikes rule would tend to increase the racial disproportionality in application of the rule. Such an outcome would be a virtual certainty in the same way that increased disproportionality in adverse outcomes would be a virtual certainty of a substantial lowering of a test cutoff or a substantial reduction in poverty. Yet in 1996 probably not a single persons analyzing racial differences in criminal justice outcomes understood that increasing the number of convictions necessary to trigger enforcement of such a rule would increase the proportion African Americans make up of persons sentenced under the rule, and possibly a great many people analyzing such differences believed that the change would reduce that proportion.

I have in some places noted that the understanding of the effects of such a modification to a sentencing rule is no better understood today than it was in 1996. But in consequence of the government's longstanding promotion of the mistaken view as to the statistical effects of generally reducing adverse outcomes the percentage of persons analyzing racial/ethnic differences in criminal justice outcomes who believe that changing a three-strikes rule to a four-strikes rule would reduce the proportion African Americans make up of persons sentenced under the rule is probably higher today than it was in 1996. The same hold for the varied misunderstandings discussed in my "[The Perils of Provocative Statistics](#)," *Public Interest* (Winter 1991). Even apart from the government's role in promoting this misunderstanding of statistics, an additional quarter century of flawed research and ill-informed commentary has merely entrenched a wide range of statistical misunderstandings that might have been deemed novel in 1991.

Understanding patterns by which measures tend to be affected by the prevalence of an outcome is also crucial to sound efforts to divine whether some part of observed racial differences in outcomes are the results of racial bias. That process commonly involves a judgment about whether a difference is so large that it cannot be explained by differences in conduct. It also frequently involves drawing inferences based on the comparative size of two relative differences. It is impossible to make sound judgments about such things without understanding that there is no rational basis for maintaining that the 160 percent difference in failure rates shown in the second row of Table 1 reflects a stronger association than the 85 percent difference in the first row of the table.¹¹

¹¹ In the earlier letter I make this point principally with respect to its Table 5 (at 22-23) referencing the fuller discussion of Table 5 (at 335-336) of "Race and Mortality Revisited." But the point equally applies to Table 1 and regardless of which measure one examines.

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Such recognition ought to lead ASA leadership also to recognize that the rate ratio and its associated relative difference are not sound measures of association as well to recognize the need to generally rethink the measurement of differences in outcome rates, as I recommended in the earlier letter. But, however long it may take ASA to address that larger subject, it can at least immediately advise the President that actions he believes will tend to reduce the measures of racial disparity on which he relied in the July 7, 2016 speech will in fact tend to increase those measures.

Among other things, such advice should enable the President, and the public at large, to better understand that such increases do not provide a basis to believe the forces causing outcome rates to differ have increased. The same, of course, holds for measures that decrease as overall outcome rates decrease. No change in any measure can provide a statistically sound basis for believing anything about changes in the forces causing outcome rates to differ unless appraised with an understanding of the way changes in the prevalence of an outcome tend to affect the measure.

Sincerely,

/s/ James P. Scanlan

James P. Scanlan

cc: Members of the Committee on Law and Justice Statistics
Members of the Scientific and Public Affairs Advisory Committee