

The Scientific Invalidity of the Analyses, Findings, and Conclusions of Swartout et al. (2015), “Trajectory Analysis of the Campus Serial Rapist Assumption”

Key Passages from Transcripts of Interviews Conducted by Georgia State University’s Research Misconduct Committee, with Commentary by James Hopper, Ph.D.

November 1, 2017

Background Information

- On December 29, 2015, after 5 months of unsuccessfully attempting to persuade Dr. Kevin Swartout and his co-authors and the *JAMA Pediatrics* editors to address major problems with the *JAMA Pediatrics* paper, Dr. James Hopper filed a scientific misconduct complaint against Dr. Kevin Swartout.
- In January of 2016 Georgia State University (GSU) formed an Inquiry Committee, and based on that committee’s findings, in March GSU formed a Research Misconduct Committee.
- In May of 2016 the GSU Research Misconduct Committee conducted phone interviews with Dr. Swartout, two of his co-authors (Drs. Jacquelyn White and Martie Thompson), Dr. Hopper, and Dr. Allison Tracy, an independent consultant retained by Dr. Hopper and Dr. David Lisak to evaluate the data, analyses, findings, and conclusions published in the *JAMA Pediatrics* paper. Critically, when doing her work, Dr. Tracy had the analysis dataset and the analysis code used for the just-published version of the paper, both provided by Dr. Swartout, and the [publicly available](#) “derivation” dataset.
- The GSU Committee’s full investigative report, released on July 1, 2016, includes *transcripts of all interviews conducted by the Committee*. In August of 2016, upon receiving Dr. Hopper’s request citing the Georgia Open Records Act, GSU provided him with a copy of the report, including the interview transcripts, which had no redactions. By law, those transcripts must be provided to anyone who requests a copy of the committee’s full report citing Georgia public records law.
- Independent consultant Dr. Tracy’s 75-page [Technical Report](#) and 7-page [Executive Summary](#) have been [available on PubPeer](#) since October 2015 (three months after the online publication of the *JAMA Pediatrics* paper). Both document the massive errors and other problems with Dr. Swartout’s latent class growth analyses (LCGAs) or “trajectory analyses” – including many errors and problems which are not addressed by the most recent (December 2015) “corrected” version of the paper.
- GSU Misconduct Committee members Dr. Richard Rothenberg and Dr. Kathryn Masyn are very senior and accomplished experts with the statistical analyses and software package used by Dr. Swartout for the *JAMA Pediatrics* paper. They also had access to the datasets and analysis codes used by Dr. Swartout for both pre- and post-publication analyses, and thoroughly reviewed Dr. Tracy’s Technical Report. Therefore, (1) Drs. Masyn and Rothenberg engaged in robust peer review of both Dr. Swartout’s work and that of Dr. Tracy, and (2) their statements *in the investigative interviews* constitute *evidence of knowledge possessed by them (and GSU) – since May of 2016 - about the major errors and other problems* with the original publication, as well as major problems with the post-publication analyses conducted by Dr. Swartout in consultation with *JAMA Pediatrics* and the “corrected” paper still distributed by the journal and still promoted by its authors.

- The GSU Committee’s July 1, 2016 report on their investigation, despite obscuring the actual findings documented in the investigative interview transcripts, “recommends future attention and action on the part of [Dr. Swartout] and his co-authors in consultation with the Editor of *JAMA Pediatrics* to examine and rectify any remaining errors in the interest of the scientific record.”
- As of the date on this document, November 1, 2017, it has been 16 months since the GSU Committee provided Dr. Swartout with its report and its recommendation that he and his co-authors “rectify any remaining errors in the interest of the scientific record.” Yet the paper still has not been retracted or corrected any further, and Dr. Swartout and his co-authors continue to portray and promote it as valid science to the media, most recently to the *New York Times*.¹

Table of Contents

Passages from the Interview with Dr. Alison Tracy, May 18, 2016	3
1. Exchange between Dr. Rothenberg, Dr. Tracy and Dr. Masyn, on how the analyses of the derivation dataset were so error-ridden and unsalvageable that they should have been “left out entirely,” even from any corrected version of the paper.....	3
2. Dr. Masyn to Dr. Tracy, praising her work	3
Passages from the Interview with Dr. Kevin Swartout, May 10, 2016	4
1. Exchange between Dr. Masyn or Dr. Rothenberg and Dr. Swartout, on a questionable assumption baked into the paper’s definitions of “rape act” and “serial rapist”	4
2. Exchange between Dr. Rothenberg and Dr. Swartout, on how the “corrected” paper does not reveal that the derivation dataset LCGA results are very different when four rather than five timepoints are used	6
3. Continued exchange between Dr. Rothenberg and Dr. Swartout, on <u>why</u> the “corrected” paper does not address the different findings from the four vs. five timepoints LCGAs of the derivation dataset	8
4. Exchange between Dr. Rothenberg and Dr. Swartout, on still more incorrect and uncorrected passages in the “corrected” paper	11
5. Dr. Rothenberg confronting Dr. Swartout with absolutely damning problems with his analyses, specifically that there is no good evidence, at least for the derivation dataset, supporting the three-class LCGA solution (reported in the paper), and actually better evidence supporting a two-class solution.....	12
6. Dr. Rothenberg pointing out that, for the derivation dataset, Dr. Swartout’s claims in the paper are contradicted by the results of his own analyses.....	13
7. Dr. Rothenberg pointing out the same damning problems regarding two- vs. three-class solutions for the “validation” dataset	13
8. Dr. Swartout reveals that his and his co-authors’ <i>a priori</i> biases and agenda to advance the three-trajectory model governed his interpretation of the analyses and his interpretation of the findings	14
9. After Dr. Swartout gives various technical rationales for choosing the three-class model over the two-class model (see full transcript), Dr. Rothenberg again sets him straight.....	15

¹ Murphy, Heather, “[What Experts Know About Men Who Rape](#),” *New York Times*, November 1, 2017.

Notes: (1) All quotations and exchanges from the interview transcripts presented in this document appear in the order they appeared in the interviews. (2) Some of the transcript passages quoted below have been edited from the original interview transcripts, but only for punctuation in order to render them more readable.

Interview with Dr. Allison Tracy, May 18, 2016

1. Exchange between Dr. Rothenberg, Dr. Tracy and Dr. Masyn, on how the analyses of the derivation dataset were so error-ridden and unsalvageable that they should have been “left out entirely,” even from any corrected version of the paper

Dr. Tracy: “I actually have not read the corrected version of the article. I am curious about what they did. *I thought they might just leave the derivation data, that whole thing, out entirely (all laughing) based on the things that I was finding*” (emphasis added).

Dr. Rothenberg or Dr. Masyn: “Yeah, I must admit, we discussed that as well.”

Dr. Masyn or Dr. Rothenberg: “We’ve had that same discussion, yeah.”

- If all three of the LCGA and Mplus experts on that phone call, two of whom are GSU faculty, are laughing and agreeing that the analyses of the derivation dataset were so bad they should have been left out entirely, including from any *corrected* version of the paper, then clearly the current “corrected” version of the paper – at least with respect to the LCGA on the derivation dataset, which by definition is the basis for the LCGA on the “validation” dataset – completely fails to inform readers of, let alone “correct,” (1) the errors and problems with the derivation dataset analyses, as well as (2) their implications for the validation dataset analysis, the interpretations of those analyses, and the conclusions advanced in the paper’s discussion section.
- Also, it is useful to compare these laughs and damning assessments by the Committee’s statistical experts with the Committee’s report, which claims, “The Committee concluded that the data analysis could not be considered a significant departure from the accepted practices of the relevant research community.” But if *three out of three* LCGA experts who carefully reviewed Dr. Swartout’s work (i.e., Drs. Tracy, Rothenberg, and Masyn) *all agree* that it has many significant errors – including errors not addressed in the current corrected publication, and errors so extensive that the derivation dataset analyses should be “left out entirely” – then how can it possibly *also* be true that “the data analysis could not be considered a significant departure from the accepted practices of the relevant research community”?

2. Dr. Masyn to Dr. Tracy, praising her work

Dr. Masyn: “I do want to just... I mean as one methodologist to another and your *objective review*, I wanted to just *compliment you on your Technical Report*. I thought it was really thorough and detailed and it was you know, it was an easy read in terms of... I mean it was very dense right and not easy for someone who is not, you know, familiar with the methods, but I mean I thought that you, you know, *you did a really nice job* in terms of you know *going back through and identifying what the potential problems were and whatnot*. So I appreciated that effort” (emphases added).

- This GSU statistics expert is not saying there are any problems at all with Dr. Tracy’s work. Quite the contrary: Dr. Masyn is strongly praising Dr. Tracy for her “objective review,” for how “really thorough

and detailed” it was, and for how well Dr. Tracy did at “identifying what the potential problems were and whatnot.”

- Here is the closing summary of that Technical Report of Dr. Tracy’s that Dr. Masyn praised:

“Based on my examination of the data and analysis models used in the JAMA article, I conclude that the scientific integrity of the study and, by extension, the conclusions based on the study are highly suspect at best. As it stands, the article relies on erroneously coded data, misalignment with the raw data, and untenable model assumptions, including the assumptions underlying the method used to handle a large amount of missing data. It is my opinion that reasonable debate over the serial campus rapist assumption cannot ride on this study.”

- Finally, as can be seen from the Committee’s interview with Dr. Swartout (see below and the full transcript), Dr. Masyn and Dr. Rothenberg were fully aware that those were *actual problems*, not “potential problems,” as Dr. Masyn euphemistically says here. Indeed, as seen in the interview with Dr. Swartout, GSU’s own experts also identified *additional problems*, both with the original analyses and with the post-publication re-analyses that Dr. Swartout conducted and reported to *JAMA Pediatrics* (after Dr. Tracy’s Executive Summary and Technical Report were shared with the editor and put on PubPeer).

Interview with Dr. Kevin Swartout, May 10, 2016

1. Exchange between Dr. Masyn or Dr. Rothenberg and Dr. Swartout, on a questionable assumption baked into the paper’s definitions of “rape act” and “serial rapist”

Dr. Masyn or Dr. Rothenberg: “So, you’re also assuming that if [a man completing the survey] says “more than five times” that they have deliberately given a woman alcohol or drugs and then engaged in sexual intercourse [despite the woman not wanting to], that that ‘more than five times’ could have happened all in a single assault with the same tactic?”

Dr. Swartout: “I think it is a good point.”

- The GSU expert is confronting Dr. Swartout with the deceptiveness of how he and his co-authors’ definition of “serial” rape leads readers of the paper (and journalists to whom they promote it) not to understand that men who admitted to having engaged in a particular type of rape “more than 5 times” in a single year of college (or even just 8 months of freshman year) were effectively assumed to have done it *all five times during a single assault*. That assumption is built into their definition of “serial” rapist as *only* someone who admits to committing rape during more than one assessment period, which includes men who have admitted to committing rape “more than 5 times” in a single assessment period, on a single item of their survey describing a single type of rape (e.g., alcohol-facilitated). And this does not even address the issue of leaving out attempted rapes, which by definition cannot be the same incidents as completed rapes and thus cannot overlap with them.
- Dr. Swartout’s response, “I think it’s a good point,” is quite an understatement. More importantly, to this day Dr. Swartout has not ensured that, by correction of the paper’s text, its readers understand

that many men who admitted to raping “more than 5 times” during a particular assessment period were defined as *not* “serial” rapists.

Dr. Rothenberg or Dr. Masyn: “How [unintelligible to transcriptionist]

Dr. Swartout: “Well, no, *but that is the way the coding was done*. (muffled response) That is the way the coding was done, *within each tactic you assume that even multiple frequencies of the same tactic was still conservatively all one assault*. (Emphasis added.)

Dr. Rothenberg or Dr. Masyn: “When would that be? (muffled) It seems like a prime [unintelligible] of the question, saying ‘Yeah I did it multiple times. I’ve given somebody alcohol and then raped them.’”

Dr. Swartout: “Yes. We...

Dr. Rothenberg or Dr. Masyn: “That is the way I would have interpreted it, you know, just naïvely.”

- Here a GSU expert is making – thus validating – the *very same criticisms* that Dr. Hopper, Dr. Tracy, and other researchers have made of (1) how “rape act” and “serial rapist” were defined in the methodology used by Dr. Swartout and his co-authors, and (2) how the paper, as written, misleads everyone who reads it “naïvely” (i.e., unaware of such critical details of the authors’ new definition) into having a false understanding of the numbers of repeated rapes reported by participants in both datasets used for the paper.
- The point above also applies to explanations and statements provided by Dr. Swartout and some of his co-authors to journalists, which have led to incorrect and misleading characterizations of the paper’s findings,² including in the titles of some journalists’ articles.³

Dr. Swartout: “So, I think it is a very valid point and I think ultimately the answer is we need to do more work on it.”

- Of course sexual assault researchers need to do more research. But that’s not the issue here. Rather, the point is that Dr. Swartout and his co-authors should not have implied, in the original or any other version of the *JAMA Pediatrics* paper, or let such impressions stand in the minds of naïve readers, that they “didn’t know” or “couldn’t tell” whether many of the men were certainly or very likely repeat rapists, and that they therefore “had to” reduce them down to a binary yes/no rape variable for each survey period in order to conduct more “sophisticated” analyses of the longitudinal data.⁴
- Also, this begs the question of whether rapists – especially rapists who have admitted to raping repeatedly before college or during freshman year – *can be trusted to honestly answer survey questions about rape year after year*. Indeed, that assumption defies common sense and is not supported by any published research. Yet that assumption is integral to Dr. Swartout and his

² Including in a January 24, 2017 [New York Times article](#), in which the journalist wrote, “while a larger number of men admitted to behaviors that constituted rape, a smaller percentage of them, closer to 25 percent, were repeat offenders,” and a November 1, 2017 *New York Times* article, in which the journalist wrote, “The recent work of Kevin Swartout, a professor of psychology and public health at Georgia State University, suggests that low-frequency offenders are more common on college campuses than previously thought.”

³ For example, the title of a *FiveThirtyEight* article published the same day the paper was made available online in July of 2015, [What if most campus rapes aren’t committed by serial rapists?](#)

⁴ See *FiveThirtyEight* article, [What if most campus rapes aren’t committed by serial rapists?](#)

colleagues' methodology, and to both the original and corrected versions of the *JAMA Pediatrics* paper. Furthermore, that assumption is never articulated in the paper itself, let alone acknowledged as a limitation of the study.

2. Exchange between Dr. Rothenberg and Dr. Swartout, on how the “corrected” paper does not reveal that the derivation dataset LCGA results are very different when four rather than five timepoints are used

Dr. Rothenberg: “one of the errors in the original article, is that the plot from the derivation data set were four time points, right? That were plotted but based on an analysis that included all 5 waves.”

Dr. Swartout: “Yes.”

Dr. Rothenberg: “So, you re-ran the analysis, including only four waves. You couldn't specify a quadratic (right) growth factor, and *arguably your classes do change some from what they have looked like in the original analysis (right) now and the correction noted in the journal, the only thing that is noted is the missing data and not any change to the derivation analysis.*” (Emphases added.)

Dr. Swartout: “Yes.”

Dr. Rothenberg: “Why?”

- Note that this seems like a relatively straightforward question, but as we shall see, Dr. Swartout's answer is anything but straightforward, and reveals failures both by him and the journal's editors to address remaining errors in the paper. (Such corrections still haven't been done, more than 16 months after the GSU Committee delivered its report that “recommends” Dr. Swartout and his co-authors “rectify any remaining errors in the interest of the scientific record.”)

Dr. Swartout: “Uh, great question. I...so it's...hindsight is 20/20. This was an obvious error. I just want to say that.”

- Interesting that Dr. Swartout “just wants to say” that he's made an “obvious error” here, in this interview with the GSU Committee members, yet he has still not ensured that this “obvious error” – or many others – are addressed by a correction or retraction of the paper.

Dr. Swartout (continues): “I didn't know about that issue with the analysis at the time that I re-analyzed the data. I didn't know about that issue until all of the 75-page documentation, report was posted online and I read about it there [that was on October 23, 2015, on PubPeer, the same day the letter was sent to *JAMA Pediatrics*]. At that point I went back and looked at it because of course I sort of [unintelligible], just like everyone else, trying to say like “Okay, do they...is there a point here?” I saw that, you know. Of course, I went back and looked.”

- This is a long-winded way of admitting that, yes, this false claim about using only four timepoints was a big error and a major inaccuracy in the original paper – and, as everyone can see, an inaccuracy that *remains* in the corrected version of the paper, despite he and the editor of *JAMA Pediatrics* having known about it since October of 2015.

Dr. Swartout (continues): “But, the fortunate thing is that based on the, the uh strategy that we used to re-analyze the data [post-publication, after our PubPeer post and letter to the editor] it was actually to try to account for something like, for another error that was in there that I hadn't seen and that hadn't been

pointed out to me. I can't speak to why they didn't point...I don't know, maybe they didn't see it either until later"

- So there's *yet another* error that has not been addressed by *JAMA Pediatrics* (if they even know about it). Also, note that the Committee members do not ask Dr. Swartout to inform them of this additional and still-unreported (in the paper) error.

Dr. Swartout (continues): "but basically I didn't want to work with any files that I had worked with before. I didn't want to start...because I believe that ultimately was why I didn't catch these errors before the paper was published...because I had just started the project. It was probably messier than it should have been, with all the different data sets and just trying...the model building process is not, isn't as elegant as we would like."

- Again, another admission by Dr. Swartout of multiple "errors," and that the project was "messier than it should have been" – statements that are totally consistent with Dr. Tracy's and the GSU Committee's findings of many major and sloppy errors in Dr. Swartout's data and analyses.

Dr. Swartout (continues): "Although I did go back and verify, or try to verify the results before we published the initial article, I didn't go back far enough to correct the errors. So again, I went back all the way. Re-created everything for the correction and moved forward. So, the reason why I'm kind of going on about this is because *I didn't know at that time about, the error including, basically within the derivation data including the fifth time point but not reporting it*" (emphasis added).

- OK, but again, this begs the question of why that misstatement about not having used the fifth timepoint *remains in the paper*, now more than two years after Dr. Swartout learned of it.
- Even more important, Dr. Swartout still hasn't addressed the question of Dr. Rothenberg's that started this exchange – about how, when only four timepoints are used, "You couldn't specify a quadratic (right) growth factor, and arguably your classes do change some from what they have looked like in the original analysis (right) now and the correction noted in the journal." As noted by Dr. Tracy too, when only four timepoints were used the "decreasing" group literally ceased to exist. That's one of the massive problems that Dr. Rothenberg is pointing to here, when he says "your classes do change." But Dr. Swartout has been dodging the question.

Dr. Swartout (continues): "It was fixed but I didn't know about it."

- Here he means that he fixed the error by only including four timepoints (not all five) in the derivation dataset analyses (after going "all the way back" to reconstruct/correct the data) that he conducted before publication of the "corrected" paper (still the published version of the paper).
- But again, this does not address the problem that Dr. Tracy pointed out in her Technical Report and Executive Summary document (again, none of which was contested by Dr. Masyn and Dr. Rothenberg, and which Dr. Rothenberg has just raised). That is, when only four timepoints are actually used for the derivation dataset, at least in the LCGA, the "decreasing" group *ceases to exist* and is replaced by a group with a "trajectory" that goes from estimated 100% probabilities of raping in pre-college and freshman year (such 100% probabilities are themselves indicative of an invalid model) to an approximately 25% probability of raping in sophomore year and then *back up to 100%* in junior year

(thus clearly not “decreasing,” even if it were a valid class, which it’s clearly not given those 100% probabilities).

3. Exchange between Dr. Rothenberg and Dr. Swartout, on why the “corrected” paper does not address the different findings from the four vs. five timepoints LCGAs of the derivation dataset

Dr. Swartout: “I see...basically what you're asking is why didn't you also note that in the...the letter to the editor? So, I have here...so I think it's...basically the, and I can definitely submit this to you for review...the way the editor asked us... I had never written a letter to the editor or a correction notice. I think what you're saying makes sense, it is something that could be noted. The editor, when he asked for the letter, said if none of the results or conclusions are affected, a letter from all of the authors addresses these points, and these points are the errors that were discovered, you know, should be...address these points with an apology to the journal.”

- That’s a big “if” in there: “if none of the results or conclusions are affected.” If the “decreasing” group *disappears* when only four timepoints are used, then certainly that’s a *big change* in both the results and the conclusions. Indeed, *the entire paper is based* on those three trajectory groups that supposedly were found in the derivation dataset and then in the validation dataset using the same analysis model.
- Also, as Dr. Tracy has meticulously documented and the GSU Committee has not disagreed (but rather praised her work), *there are many other serious errors and problems with those analyses*, especially for the derivation dataset, including: the invalid smooth trajectories assumption; the underspecified model (see below); no basis for choosing the three-class solution over the two-class solution (see below); and too-small latent class sizes with too-high probabilities of misclassification (see below).
- Finally, what about those errors and problems that Dr. Swartout knew about from Dr. Tracy’s Executive Summary in early September 2015 and from her detailed Technical Report in late October, both of which he received well before making the final, December 2015 correction to the paper that he is referring to here? Why has *not one* of those errors and problems been addressed with a correction or retraction?

Dr. Swartout (continues): “So, my thinking at the time...I may have been kind of stuck in a mental box, but I was just laser focused on these issues with the data. I felt at that time, I think the changes to the model parameterization were, they were obviously resulting from...I felt like that at that time they were resulting from the issues with the data. So, it seemed like the issues with the data were paramount for the correction letter.”

- This strains credibility, his stated belief that the only problems were with the data. At a minimum, if Dr. Swartout remained “laser focused” on those data problems, then he willfully ignored Dr. Tracy’s meticulous exposure of errors and problems *with the analyses, even after the data were corrected*, in her 75-page Technical Report – which on October 23, 2015 was made available to Dr. Swartout, *JAMA Pediatrics*, and the public via PubPeer.
- As the GSU experts knew from Dr. Tracy’s Technical Report, and as I discussed when they interviewed me, Dr. Tracy carefully cleaned and corrected the derivation data, just as Dr. Swartout did, and then ran the Mplus LCGA modeling code (provided by Dr. Swartout) on the corrected data.

- Critically, after that data cleaning *all of the major problems with the model remained*, including the invalid smooth trajectories assumption, the model under-specification and Mplus-fixed parameters, and the too-small class sizes. Indeed, the too-small class sizes remained for the validation dataset as well, as seen in table 3 of the corrected version of the paper.
- Furthermore, as we shall see below, Dr. Masyn and Dr. Rothenberg found the same problems Dr. Tracy did, *and more*, with the LCGAs – none of which have yet been addressed by the journal for the benefit of those who read the paper (and try to apply its alleged implications to their work, including policy making).

Dr. Swartout (continues): “I do...and again, *I can submit this*. The editor asked for a lot more information than the correction letter. And again, there is a list with six or seven items...the correction letter was just one of them. I have got...he asked for an itemized list of the errors and corrections with a corrected, basically. And here, so the issue...so there is...*the text corrections that you have picked up on are noted in this itemized list* [unintelligible] the editor...it was in, I believe the same email as the correction letter. So, it shows the change from having, let's see, having quadratic change in the derivation change is noted in this document and also...let's see...after identifying the model, the best [unintelligible]...yes” (emphases added).

- Remarkably, we see here that Dr. Swartout *had not previously submitted* his correspondence with the *JAMA Pediatrics* editor to the GSU Committee investigating him for scientific misconduct. He is clearly telling the Committee, for the first time, about the existence of this written request from the *JAMA Pediatrics* editor for an “itemized list” of “errors and corrections,” which includes not only “text corrections” that the GSU experts “have picked up on,” but still more errors that should have been corrected in the paper (or referred to in a retraction notice).
- This is confirmed at the end of this interview, when Dr. Masyn says, “the correspondence with the editor about the corrections would be useful.”
- Why didn't the GSU Committee have this document well in advance of this investigative interview? Did Dr. Swartout withhold it or forget to give it to them? Was the Committee not sufficiently “thorough” (per GSU policies) in its investigation? Is this an example of the Committee failing to adhere to the “Pursue Leads” clause of the federal regulations governing such investigations (i.e., 42 CFR 93.310.h.), despite claiming to have followed those regulations?
- This also raises the issue of additional errors that have not yet been addressed in the current “corrected” version of the paper.

Dr. Swartout (continues): “So, it was noted in that document but you're absolutely right, it was not noted in the correction letter. (affirmative) Um, I see where you're coming from. I was not...I don't believe I was trying to hide from that issue. And I don't think that you're suggesting that either.”

- Dr. Swartout reveals his own full knowledge that there remain uncorrected errors in the paper (whether due to sloppiness, incompetence, deliberate deception, and/or resistance from the journal editors to setting the scientific record straight).

Dr. Rothenberg (continues): “No, but so...but, you know, just looking...so *even if we look at just the plots, right?* That you felt like that was not enough of a change...that...I mean you felt that those were (yeah) those were the...it's comparable in terms of...from the original to the corrected.”

Dr. Swartout: “Um, it's for a medical journal with a practitioner audience, I felt like the trajectory pattern was comparable *in terms of the interpretation*” (emphasis added).

- This is remarkable: Dr. Swartout “felt” that the trajectory pattern was “comparable in terms of the interpretation.”
- Dr. Swartout knew from mid-summer 2015 – and only became more aware in September with the public release of Dr. Tracy’s Executive Summary, and still more aware in late October with the release of her 75-page Technical Report – that the validity of the science, especially the LCGA modeling, had been effectively shredded by Dr. Tracy, a top-notch methodologist with far greater expertise than he in these methods. Yet Dr. Swartout determined what to communicate to the journal editor and what to submit for the corrected version of the paper based on what he “felt” looked “comparable in terms of interpretation”?
- And of course Dr. Swartout knew the potential impact of this paper on the media, the public, and public policy around the country – and the potential stakes for public health of misleading people about the true nature of repeat rape by college men.

Dr. Swartout (continues): “I definitely understand your point that a change in parameterization for some audiences would be a major issue.”

- Again, this is remarkable, and disturbing. As if getting the science right, and being meticulous about it, was not vitally important on such a high-profile paper – especially after it had come under attack for the sloppiness and invalidity of the analyses, the deceptiveness of the definition of “serial” rape, the misleading interpretations of the results, etc.
- Also, as noted above and further revealed below, the errors and problems remained huge, invalidating of the trajectory analyses of *both* datasets, and invalidating of a central claim of the paper, that is, that the “derivation” dataset analysis was in fact valid and that it had been successfully applied to the “validation” dataset.

Dr. Swartout (continues): “A lot of...during the peer review process, a lot of the back and forth with the reviewers and with the associate editors, were to bring down the language *and I by no means know as much as the two of you*, so even from my level down to a practitioner audience's level, there is evidence of that in the discussion of maximum likelihood estimation, that we went back and forth and back and forth to say it in the most simple terms. So, this is the audience. Although it is a high visibility journal, it really is a practitioner audience journal” (emphasis added).

- Dr. Swartout may have believed this was true during the *pre-publication* process, though even for that timeframe the claim is dubious. That is, of course the paper was intended, from the start, to advance *the science* on repeat rape by college students, not merely to provide some impressions for practitioners. That’s what not only he but his co-authors Drs. White and Thompson keep saying in their interviews with the GSU committee, as can be seen in the transcripts: that they were very “excited” about how these new statistical and scientific methods were *advancing the science*.

- Regardless, once the paper was challenged, and Dr. Tracy's damning Executive Summary and Technical Report were posted on PubPeer, this claim became ridiculous. Yet that's precisely the time under discussion in this part of the interview: after Dr. Tracy's critique and before the (December 15, 2015) publication of the corrected version of the paper.

Dr. Swartout (continues): "So, I believe with the correction letter and with the way I approached this, *I was really focused on the interpretation*. And, when I went through the paper, *basically every number in the paper changed when the data changed*. Almost everything because, as you hinted, the denominators changed, so that changed all the percentages (affirmative) and everything. I went through the discussion and I have tried to be open throughout this process...*this is a really important topic, we have to get this right, we have to put our egos aside on this one*. None of the interpretations changed and that was my *feeling* and that was my co-author's *feeling* and I believe the..." (Emphases added)

- He can't have it both ways: On the one hand, it's only a "practitioner audience" for this paper and he went with how he "felt" about the new trajectories compared to the old ones, but on the other hand, "basically every number in the paper changed" and "this is a really important topic, we have to get this right."
- If Dr. Swartout wanted to get it right, especially after the LCGAs for the originally published paper had been publicly revealed as error-ridden and invalid (again, *not* just because of missing or incorrect data, because Dr. Tracy found the same problems *after* cleaning up the data), then Dr. Swartout, and the journal's editors, had to meticulously correct the paper, or retract and republish it, in a way that reflected the actual nature and results of any new analyses.
- However, this point is moot because, as we shall see, the new analyses were no more valid than the original ones.

Dr. Swartout (continues): "I can't speak for the editor, but the editor, I believe, agreed. And again, I was told that he re-reviewed the paper along with the correction as well as the consultant and we didn't hear anything."

- All the worse for the scientific integrity and credibility of the editor and the journal.
- And how convenient: "...and we didn't hear anything." Thus not one of numerous additional corrections that Dr. Swartout is acknowledging here (to "basically every number in the paper"), let alone the other major errors and problems with the analyses themselves (which, as we shall see, are about to be raised quite pointedly by Dr. Masyn and Dr. Rothenberg), were corrected or otherwise addressed (i.e., retraction).

4. Exchange between Dr. Rothenberg and Dr. Swartout, on still more incorrect and uncorrected passages in the "corrected" paper

Dr. Rothenberg: "Okay, so you *felt* that it wasn't changed enough, that the *interpretation* was similar. In the paper it says 'estimates were similar across the derivation and validation model. For clarity only estimates from the validation model are presented.' *So, are you talking about the actual parameter estimates? Because they are parameterized differently. So, which estimates were similar?* (Emphases added)

Dr. Swartout: "I was thinking about the parameter estimate."

Dr. Rothenberg: “Okay. Except that the derivation is a linear model and the validation is a quadratic (affirmative) model. So, the parameter set is (affirmative) different across the two. So...”

Dr. Swartout: “I was, I believe my thinking on this...and again, you had questioned that [unintelligible], so I am not disagreeing with you. Again, I think it was really, in the *interpretation* of the trajectory shapes were similar across the two models and so the parameter estimates in terms of...I believe it was *more holistic*, that was my take on it” (emphases added).

- Dr. Swartout is being pointedly confronted with the continued inaccurate and deceptive nature of the description of the trajectory analyses in the “corrected” paper.
- His rationalization for such scientific irresponsibility, again, rests on how the *shapes* of trajectories *looked* to him, and his “interpretation” of those shapes as similar based on his “more holistic” “take on it.” Never mind that the statistical modeling of those shapes was based on untenable and invalid assumptions, model under-specification, insufficient power, too-small latent class sizes, extremely high probabilities of misclassification, etc.

5. Dr. Rothenberg confronting Dr. Swartout with absolutely damning problems with his analyses, specifically that there is no good evidence, at least for the derivation dataset, supporting the three-class LCGA solution (reported in the paper), and actually better evidence supporting a two-class solution

Dr. Rothenberg: “So, in terms of the selection of the number of classes and the sensitivity of the class results (affirmative) to the model specifications.... So, fit data indices, right? *Both in the original and the corrected article (affirmative) right? If you look at the overall set, a two class model fits the data consistently (affirmative).* (Emphases added)

- This is absolutely critical, the issue of whether a two- or three-class solution is a better fit to the data. It goes to the heart of the paper, to the validity of the analyses and to their implications for patterns of rape over time. In the paper (and to the media) Dr. Swartout and his co-authors *claim* to have found that a three-class solution best fit both datasets, and Dr. Swartout has just been claiming the same thing in this interview, including for his post-publication re-analyses. But here Dr. Rothenberg, who has much more expertise in those analyses than Dr. Swartout, is telling him that a two-class model “fits the data consistently.”
- And note that this critique is true of both the original and the “corrected” version of the paper, thus both the originally reported analyses and the re-analyses that Dr. Swartout did on the corrected data (on which he said he was “laser focused” while either ignoring the details of the statistical modeling or simply going with how he “felt” the new trajectories “looked” in a “holistic” way).

Dr. Rothenberg (continues): “Now, my question is did you, beyond these fit indices, which at least for the derivation data set don't automatically point to, uniformly point to (affirmative), even the ones you present. *Did you look at a two-class solution? Did you evaluate that? Because in your introduction you say well, if this assumption holds then we would expect to find (affirmative) two classes, right?* Arguably in the derivation data set, maybe there [is] *only support for two classes* because you also have the standard errors on your quadratic low [unintelligible] (affirmative), right? I mean (talking over each other), *none of them are significant for the derivation. None of them are significantly different from zero (affirmative)...*” (Emphases added)

- Dr. Rothenberg is saying that the LCGA fit indices, at least for the derivation dataset, don't "automatically" or "uniformly" point to the three-class solution that is supposedly the new and exciting advance of the science on repeat or "serial" rape that the paper is supposedly making.
- Then Dr. Rothenberg refers to this sentence from introduction of the *JAMA Pediatrics* paper: "Guided by the prevailing serial rapist assumption, one would expect 2 discrete [trajectory] patterns: a small group of men (4%-5%) who are likely to rape consistently and a larger group who are not likely to rape at all."
- Finally, Dr. Rothenberg asks a series of pointed, perhaps even rhetorical questions about whether Dr. Swartout *even looked at* a two-class solution. He then points out, "Arguably in the derivation dataset, maybe there [is] only support for two classes," and proceeds to cite very specific evidence from the results of that LCGA.
- Thus not only was the evidence available to Dr. Swartout not "automatically" or "uniformly" supportive of the three-class solution that was reported as the best solution in the paper, including the "corrected" version of the paper, but arguably there was *only good support for two classes*.
- Clearly these facts need to be addressed in a massive correction or retraction of the paper. Clearly responsible journalists should not be hoodwinked by the false claims about the three trajectories supposedly found by Dr. Swartout, nor by false claims that those trajectories analyses (based on misleading definitions of "serial" rape) have shown or even "suggest" that most college rapists are not repeat or "serial" offenders.

6. Dr. Rothenberg pointing out that, for the derivation dataset, Dr. Swartout's claims in the paper are contradicted by the results of his own analyses

Dr. Swartout (continues): "The quadratic? Or the linear?"

Dr. Rothenberg: "The quadratic growth factor, or the...let me open up that. But, okay, so the point is though, you've got a situation where in terms of *your parameter estimates, they are not significantly different across the classes. You've got fit indices that aren't all (affirmative) pointing to three classes for the derivation data set. But, you say three classes support it uniformly for the derivation.*" (Emphases added)

- Dr. Rothenberg is pointing out to Dr. Swartout – in very stark terms – that claims he made in the original and corrected versions of the paper are at odds with the *actual* results of the analyses.

7. Dr. Rothenberg pointing out the same damning problems regarding two- vs. three-class solutions for the "validation" dataset

Dr. Rothenberg (continues): "The validation...did you look at a two class? Did you constantly rule a two-class model out (affirmative) as not a viable alternative based on fit and other fit indices? Like what? And you know, were you uncomfortable at all with what was happening with the parameter estimate for...and I do mean the linear and the quadratic on the validation. The quadratic on the validation are the ones that are blowing up."

- Again, these are pointed, even rhetorical questions, and Dr. Rothenberg is citing even more evidence that the three-class solution presented as valid and solid in the paper was neither valid nor solid, at

least not compared to the two-class solution that the paper claims to have found to be inferior to the three-class solution. (And don't forget that, *even if* the three-class solution were superior on these criteria, it *still* has latent class sizes so small and misclassification probabilities so high that the model is invalid.)

Dr. Rothenberg (after brief clarification): “Had no quadratic in the corrected derivation but in the validation they are kind of blowing up. So (affirmative), like what, you know...did you look at other models (affirmative)? *Did you consider all these things because, you know, when you dug deeper there isn't like a strong...there is not strong evidence, at least, in the derivation, arguably in the validation, to reject the two-class model and say [unintelligible] three*, and if the two class fits [then] any higher number of classes is going to fit as well. So, did you...so what... (Emphases added)

- Again, not just for the derivation dataset, but for the validation dataset too, “there is not strong evidence” to support doing what Dr. Swartout has done, that is, rejected the two-class solution for the three-class solution.
- In short, the LCGAs or “trajectory analyses,” their presentation, and their interpretation – for both the derivation and the validation datasets, in both the original and “corrected” versions of the paper – are utterly invalid.
- The exchange continues like this (see transcript), with Dr. Rothenberg pointing out, in still more detail, the major problems with the analyses and the paper – indeed, problems so severe that only a retraction can suffice to correct the scientific record (and hopefully stop Dr. Swartout and his colleagues from continuing to mislead journalists, the public, and policy makers).

8. Dr. Swartout reveals that his and his co-authors’ *a priori* biases and agenda to advance the three-trajectory model governed his interpretation of the analyses and his interpretation of the findings

Dr. Swartout: “We chose, and I think that the three-class structure fit because...I think the model fit indices, I *believe* they look good. I agree with you that the two-class indices look good as well. *I think we learn a lot more from the three-class model*. I think actually *looking at the trajectory pattern and seeing that third trajectory really educates us* on the pattern of sex, of rape perpetration across time. I think it maps on with what we see on the, just the raw data. Just looking at the numbers of men who report perpetrating rape before college don't really report perpetrating rape in college.” (Emphases added)

- In short, Dr. Swartout “believes” and “thinks” that the three-class model “really educates us.”
- But of course, this model “educates” in the way that he and his co-authors *set out* to “educate” researchers, professionals, journalists, policy makers, and the public from the beginning. Dr. Swartout’s opening comments in this interview (see transcript) strongly suggest that the idea of finding a three-class model was (a) “hatched” by co-authors Mary Koss, Jacquelyn White, Martie Thompson, and Antonia Abbey, in order to (b) *create* that alleged finding, publish the paper, and thereby counter and even discredit the “prevailing serial rapist assumption” – by having Dr. Swartout conduct and describe the results of very “sophisticated” analyses (i.e., analyses that are not understood by most scientists, let alone journalists and policy makers; analyses that were opaque to the paper’s pre-publication peer reviewers and everyone else, including, as revealed by the interviews with Drs. White and Thompson, his own co-authors on the paper).

9. After Dr. Swartout gives various technical rationales for choosing the three-class model over the two-class model (see full transcript), Dr. Rothenberg again sets him straight

Dr. Rothenberg: “No, I mean all of the confidence intervals. So this is, you know, I'm just trying to get...looking at all of the confidence intervals. Even if you believe they are significantly different from zero for the one tail, the relaxed alpha, or whatnot, like on the quadratic [justifications Dr. Swartout has just given]...*all of those confidence intervals overlap with one another.* (Emphasis added)

- Dr. Rothenberg is pointedly dismissing all of the claims that Dr. Swartout has just made, and then proceeds to drive his point home...

Dr. Rothenberg (continues): “So, in terms of class separation, right? (affirmative) *Visually they look really different but statistically, right? (affirmative) There actually isn't any difference* in the quadratic from all the, across all three (okay) groups, right? I mean in terms of separation and this is even though your entropy is high (affirmative) you...*even if we classified everyone in the lower time limited class, 100%, right (affirmative)?* Our classification error would be very small (affirmative), right, overall because there are (right) so many people in that class (right), so the fact that the entropy is near the proportion (affirmative) in your largest class, it is sort of...it is one of those things, right? It is like, you know, *you could have a lot of classification error across the other classes.*” (Emphases added)

- The point Dr. Rothenberg is making supports Dr. Tracy's findings and critique, with respect to the relatively huge group of “low/time-limited” rapists compared to the very small alleged “decreasing” and “increasing” groups. Specifically, as Dr. Tracy also pointed out, relying solely on the overall low classification error, which is disproportionately influenced by the huge low/time-limited class, completely obscures the *very high classification errors* associated with the *much-too-small* “decreasing” and “increasing” groups.
- Also, keep in mind that the vast majority of men in both samples reported *never* committing a single rape, and that those men compose the vast majority of the men in that “low/time-limited” class. So of course that huge class of self-reported non-rapists is going to look good in some ways, statistically, as Dr. Rothenberg is pointing out here. But when you look at the other two classes/groups (e.g., associated with the three-class solution that Dr. Swartout chose due to his and his co-authors' biased and non-scientific agenda), they are extremely small, indeed too small to be valid, which is what Dr. Rothenberg is referring to when he says here, just as Dr. Tracy did, that there is “a lot of classification error across the other classes.”
- Furthermore, to claim that these LCGAs or trajectory analyses tell us *anything* about the trajectories over time of *rapists*, when the by-far biggest class (which as Dr. Rothenberg has just pointed out, is the only statistically sound class) is composed almost entirely of men who reported *never* having raped, is not merely misleading but absurd. This is another fundamental problem with the science of the paper and with the claims made about its alleged findings – even if they were valid, which they are not, as Drs. Rothenberg and Masyn thoroughly pointed out during this interview back in May of 2016.