

To: Dr. Michael F. Malone, Vice Chancellor for Research & Engagement

From: Donald Kroodsma, Professor Emeritus, Biology

Re: Scientific and Ethical Misconduct; Professor Jeff Podos, Biology

For almost a year and a half, since May 2014, I have been trying to address what I feel is scientific and ethical misconduct by Dr. Jeff Podos, Biology Department and Organismal and Evolutionary Biology Graduate Program. My efforts have been thwarted by stonewalling, by intimidation (UMass police threatening me with criminal harassment charges), by an "institutional review" that I am not allowed to see (secret because of "university rules"), and whatever means Podos has had at his disposal to avoid dealing with me and his work directly.

I come to the Vice Chancellor for Research as a last resort, after all other avenues to settle this matter have been exhausted (details below). Most recently, the following attempts have failed:

2 November 2015. From Biology Letters: "We consider the matter now closed."

2 November 2015. Dean McCarthy. No response by the date I had asked for a response, if one was forthcoming.

29 October 2015. Dean Goodwin. "I am not in a position to do any more on this issue."

I do not take this matter lightly, as will be abundantly evident below, because I feel the methods used by Podos are an affront to scientists and science everywhere, undermining our collective integrity. And I care first hand because Podos makes a mockery of a field of science that I value enormously, the study of birdsong. To make matters worse, Podos trains another generation of graduate students in the same techniques of what can best be called "pseudoscience." I realize that these are strong words, but I believe entirely warranted. I elaborate in this document and the attachments.

In studying the "Procedures for Dealing with Charges of Misconduct in Research and Scholarly Activities at the University of Massachusetts Amherst," I was struck by the following quotes, which are particularly relevant for the case I address (emphases mine):

Misconduct in research and scholarly activities is *injurious* to the University's teaching, research, and public service missions and *cannot be tolerated*.

Research and scholarly misconduct involves *misrepresentation of the procedures and outcomes of research to gain some advantage*. Misconduct may often be difficult to separate from error or poor judgment, from which it is *distinguished by the intentions* of the person(s) involved.

1. Falsification or fabrication: This includes falsification, modification, or fabrication of data or facts, or *selective inclusion or exclusion designed to mislead or to support false conclusions*.

5. Misrepresentations in publication: This form of misconduct involves the publishing or public circulation of material *intended to mislead the reader*.

I here provide a history of what has transpired since May 2014, when I first began trying to address this situation.

May 2014. At an ornithological conference in Rhode Island, Goodwin and Podos deliver an oral paper that I immediately realize is false. In a highly polished presentation, they tell a clever, exciting, and novel story about “Teams of Rivals” in chipping sparrows, how territorial males form alliances and coalitions based on precisely assessing the trill rates in each other’s songs. Goodwin won a Best Student Paper Award (as did, not coincidentally, the other Podos student in the competition—the only two awards at the scientific meeting went to Podos’ only two students, a “clean sweep,” boasted Podos on his website).

Goodwin and Podos create their story in large part by omitting reference to two key biological facts about their study animals. These are not obscure facts (about how the sparrows learn their songs, and where they routinely use them), but were published in mainstream journals by another graduate student in the same UMass Amherst Biology Department a few years before, working on the same sparrow populations that Goodwin and Podos worked on. Those two biological facts fatally undermine the Goodwin and Podos story (see attached; for short version, see **No Teams of Rivals or Coalitions in Territorial Sparrows**; for longer version, see **No Support for Honest Signaling in Birdsong and the Motor Constraints Hypothesis**). I would learn later that most of the data and statistical tests for the study were never mentioned in the publication (i.e., discarded), because they were not statistically significant. Instead, only a few tests that reached statistical significance were reported, those consistent with the story of song performance as promoted by Podos since 1997 (and those statistics were done wrong—Akçay and Beecher 2015).

I now read back to the VCRE document on misconduct: “*selective . . . exclusion designed to mislead or to support false conclusions*.” Yes, precisely. Or “*misrepresentation . . . to gain some advantage*.” Yes again, at the immediate expense of every graduate-student scientist attending the meetings, and the general expense of science everywhere, and scientists in all fields of endeavor; Goodwin won a Best Student Paper Award for a story fabricated by omitting reference to the basic biology of the subject animal, inventing two traits known not to exist, and selectively excluding inconvenient data and statistical tests. I have not studied the best-student paper presented by Dana Moseley at those meetings (she also won a major award at another scientific meeting the year before), but based on other evaluation of her work with Podos (see attached, **Podos and Performance studies**) I suspect it is equally contrived and false.

I also read in the VCRE document the following:

Misconduct may often be difficult to separate from error or poor judgment, from which it is distinguished by the intentions of the person(s) involved.

If the Goodwin and Podos oral paper and publication of that paper in *Biology Letters* were an isolated event and dealt with professionally by the authors, one might give the authors' the benefit of the doubt and attribute the matter to "error or poor judgement," even though they knew all about the biology of the chipping sparrow that refuted their paper before it was published. But I think that the intentions of the authors become clear when one considers what has transpired since May 2014, as well as before May 2014.

Failure to communicate—"Ethics in Publishing"

Repeatedly, from July 2014 to December 2014, I tried to establish a dialogue with Goodwin and Podos (see attached document, **Podos and Criminal Harassment**). Never did I receive a reply. At one point, in case emails weren't working, I sent a U. S. mail letter. Here are excerpts from those eight emails (full content of emails in attached document):

- 1) 9 July 2014 "I wondered if you could help me understand why in the paper you focused only on trill rate."
- 2) 1 October 2014 "... if you'd like to talk some of these things through, let me know, and I'll come over to UMass"
- 3) 8 October 2014 "I have no idea what is in your head ... I'm still available to talk"
- 4) 15 October 2014 "JEFF, HERE'S ONE LAST ATTEMPT TO ENGAGE YOU"
- 5) 16 October 2014 "something well worth reading, from half a century ago" (Feynman 1985, *Cargo Cult Science*; on the "utter honesty and scientific integrity" needed to do science)
- 6) 9 November 2014 "I'd welcome any dialogue with you"
- 7) 1 December 2014 (early in day) "If you want to talk about any of this . . . , I can be reached at 413-247-3367, just across the river from you. Or email me"
- 8) 1 December 2014 (late night) "I thought it appropriate to seek any feedback that cited authors or others might like to provide. A dialogue would be welcomed" [At this point, exasperated at failing to evoke any response from Goodwin and Podos, I sent my larger review out to all those whom I critiqued, an ethical requirement from the Animal Behavior Society.]

This failure to communicate is troubling. Podos is president-elect of the Animal Behavior Society, which has a strong Ethics in Publishing statement on its website (see <https://www.elsevier.com/journals/animal-behaviour/0003-3472/guide-for-authors#5001/>):

Animal Behaviour publishes papers by scientists conducting research at locations around the globe . . . Professional integrity in the conduct and reporting of research is an absolute requirement of publication in the journal, as is a willingness to share information with other members of the scientific community. Consequently, as a condition of publication in Animal Behaviour, authors must agree both to honour any reasonable request for materials or methods needed to verify or replicate experiments reported in the journal and to make available, upon request, any data sets upon which published studies are based. Anyone who encounters a persistent refusal to comply with these guidelines, or has reason to suspect some other departure from acceptable standards of scientific conduct, should contact the appropriate Executive Editor (European or American) of the journal. The Executive Editors will act in accordance with the guidelines of the Committee for Publication Ethics (<http://www.publicationethics.org>) and may inform an author's institution of a purported infraction. Statements on scientific integrity by the Association for the Study of Animal Behaviour and Animal Behavior Society can be found at, respectively, <http://www.asab.org> and <http://.animalbehaviorsociety.org>.

The president-elect of the Society is in clear and extreme violation of its own Ethics in Publishing statement.

Intimidation by Threatening Criminal Harassment Charges

As if not responding weren't sufficient, Podos engaged the UMass police force to silence me (see transcript of 18 December 2014 phone call from Officer Liptak, in the attached **Podos and Criminal Harassment**): If I attempted any more communication with Podos and his students ("UMass Biology"), I would be charged with criminal harassment. In a further email with the police, I was told to inform the ~50 international correspondents on this topic that none of them were allowed to contact Goodwin and Podos either. At that point I told the officer that I was embarrassed for her, and for Podos, and I would not inflict this kind of international disgrace on anyone.

Continuing Defense of Goodwin and Podos (2014)

Even though both I and a University of Washington group told Goodwin and Podos that we knew of the serious flaws in their study, which clearly rendered it false, Goodwin and Podos presented the same paper later at another meeting during August 2014 (Animal Behavior Society). And, in spite of knowing all of the flaws, they vigorously defended the paper again in their 2015 rebuttal to Akcay and Beecher (2015), arguing cleverly enough that anyone not reading carefully will assume this is just another case of minor disagreements of opinion about whether, for example, birds could be "fingerprinted" based on their songs alone, without having the birds marked. I will state here in the strongest possible terms that this is not a matter of opinion. It is science vs. non-science, or pseudoscience, or junk science (choose your terms).

The Continuing Secrecy

In frequent exchanges with Biology Letters, in an attempt to have Goodwin and Podos (2014) simply retracted, matters have taken another strange twist. Biology Letters writes to me the following (18, 22 September 2015):

. . . the authors' institution have conducted a thorough independent investigation into this matter [Goodwin and Podos 2014] and deemed this to be a difference of scientific opinion, of the kind that is very common in this field and across all scientific research. We are satisfied with the rigour and findings of this institutional investigation and therefore will not be taking any further action on this occasion . . . Dean McCarthy should be able to provide these findings accordingly

Interestingly, Dean McCarthy seems to know nothing about this investigation (24 September 2015):

Dear Dr. Kroodsma,

I did not send anything to any journals, nor could I have done so legally. My communications with students, when I act in my capacity as Dean of the Graduate School, are student records covered by the Family Educational Rights and Privacy Act (FERPA).

John McCarthy

Senior Vice Provost for Academic Affairs and Dean of the Graduate School

Inquiring further about this mystery, Surayya at Biology Letters tells me (30 September, 23 October, 2 November 2015) that

The report findings were sent . . . by the authors and this was signed off by the university review panel who investigated the case . . . I cannot send a copy of the findings on to you . . . [because of] . . . the rules as laid out by the university . . . I'm afraid that I don't have another name [besides Dean McCarthy] from the university that could assist you with this [getting a copy of the report] . . . the report was provided to us in confidence . . .

This "institutional investigation" remains a mystery to me. As I understand the facts, 1) there exists a UMass Amherst investigative report with Dean McCarthy's name on it, 2) but Dean McCarthy knows nothing of this report (in follow-up emails to attempt to verify this, Dean McCarthy has not responded); 3) the report is signed off by some review panel, 4) but the review panel seemingly has no names and is not communicating with Dean McCarthy; 5) the report is secret because of university rules laid out by the review panel with no names, and 6) the secret report exonerates Goodwin and Podos on all fronts; and 7) the secret report (deemed by Biology Letters to be independent, thorough, and rigorous) was submitted by Goodwin and Podos.

The continuing efforts to stifle all scientific discourse are extreme. Taking the facts at face value (e.g., Dean McCarthy has good memory and honestly tells me he knows nothing of the report, there is only one Dean McCarthy, no one is playing games with words, etc.), the possible explanations for what has transpired in this institutional review are limited, and not so good.

I think that the office of Vice Chancellor for Research will have a better chance of getting to the bottom of the above mystery than I will, so I am going to stop trying to obtain a copy of this secret report, or figure out who wrote it. But, I doubt very much that anyone, review panel or not, will publicly defend Goodwin and Podos (2014), because anyone who condones their work as science or their behavior as ethical will no doubt have their own work scrutinized.

A History

If all of the above were an isolated incident involving a single paper, even given the most bizarre series of events surrounding it, one might still cut the authors some slack, but . . . eleven years ago, on an in-house review, I pointed out to Podos the difference between science and what he was doing:

“Science is the search for truth, regardless of how good the story is; marketing and advertising is the search for a good story, regardless of the truth” (October 2004).

To me, Podos was clearly and cleverly marketing sexy ideas with no substance; that was not science, I pointed out. Since 2004, there has been no communication between me and Podos or any of his students, until 2014 (even though I’m an emeritus professor in the same Biology Department, UMass Amherst). By definition, we have a long-standing disagreement about what constitutes science (but that is not the same as a long-standing vendetta, as I have been accused of). Frankly, I do not believe Podos does science, but instead throughout his career has marketed himself and his ideas by “*misrepresentation of the procedures and outcomes of research to gain some advantage*”(VCRE document on scientific misconduct).

After studying Goodwin and Podos (2014), I reviewed some of the other papers Podos had published on his idea of song performance (see attached, **Podos and Performance Studies**). In spite of Podos’ attempt to prove otherwise, there is not a single credible bit of scientific evidence to support the hypothesis that he continues to market.

The first paper among my reviews, that by Podos, Peters, and Nowicki, is highly informative. It shows how selective the authors are in finding support for their story, claiming a dozen times how certain selected data are *consistent with* their performance hypothesis, but never once do the authors help the reader fully appreciate the contribution (or lack of it) that they are making to science. No alternative explanations are considered,

and data inconsistent with their favored explanation are ignored. With the admission (inadvertent, in an email by Goodwin to Univ of Washington group before all communications were silenced) by Goodwin and Podos (2014) that most of their data and statistical tests were discarded, one sees how the stories develop from the outset.

Or consider my review of Lahti, Mosely, and Podos—it is, frankly, highly deceptive in how it manipulates readers to a point of view in the Introduction, and then does its best to conceal the real story in the data and instead promote Podos' false performance hypothesis (see review in **Podos and Performance Studies**).

Accusations against Me; My Motivations

I am not a welcome messenger, I realize, and all manner of accusations have been leveled against me by Podos (and probably his graduate advisor Nowicki), but never to my face, never where I can address them directly (e.g., in confidential statements to the editor of the journal *Animal Behavior*, where I was hoping to publish my findings). I have been accused of attacking graduate students (Goodwin, Moseley), for example, but I would simply ask about all of the graduate students who were denied a fair competition for a Best Student Paper Award at the ornithological meetings in May 2014. I do not believe cheaters should be rewarded, especially not in science (not in the Olympics either, where medals are retracted when cheating is discovered).

Why am I committing so much energy over the last year and a half to addressing this issue? I will copy here what I wrote to Dean Steve Goodwin on 17 June 2015:

One final thought. I am sure that the motivation for my efforts will be challenged. As scientists, let's list the possible explanations/motivations:

1. I loathe what is called "junk science," especially in my cherished field of birdsong. **True**. There's abundant evidence for this explanation. See previous papers I have published that challenge scientists in my field to do better work, such as the following:

Kroodsma, D. E. 1989. Suggested experimental designs for song playbacks. *Animal Behaviour*. 37:600-609.

Kroodsma, D. E. 1990. Using appropriate experimental designs for intended hypotheses in song playbacks, with examples for testing effects of song repertoire sizes. *Animal Behaviour*. 40:1138-1150.

Kroodsma, D. E. 1990. How the mismatch between the experimental design and the intended hypothesis limits confidence in knowledge, as illustrated by an example from bird-song dialects, p. 226-245. *In: Interpretation and explanation in the study of animal behavior*. M. Bekoff and D. Jamieson (eds.). Westview Press, Boulder, Colorado.

Byers, B. E., and D. E. Kroodsma. 2009. Female mate choice and songbird song repertoires. *Animal Behaviour*. 77:13-22.

2. I would like to undermine the career of anyone who publishes pseudo-science and who, with every publication, removes us farther and farther from a true understanding of what birds actually do. **True**. This is not personal. This is science, and a frontal attempt to stop pseudo-science.
3. I'd like to give Jeff Podos the opportunity to deal with these issues on his own terms. **True**, but I've given up (my naïve) hope that he'll come to terms with his ways unless forced to. I've given him every opportunity to do so in the past (I could send you copies of my previous emails to him), only to be threatened with charges of criminal harassment. Meanwhile, Podos continues, defiantly: Goodwin and Podos repeated their same flawed paper at a second scientific meeting last year, even after all of the flaws were pointed out to them; and they have defiantly defended their original publication in *Biology Letters*. If you want to try to convince Jeff to come to terms with these issues on his own, be my guest. I believe it will be far better for him in the long run if he himself addresses these issues candidly, rather than my (and others) taking him to task in a public forum for his misconduct.
4. This is a heads-up for you, in a leadership position, as to what is just over the horizon, to deal with in whatever way you wish, professionally or personally. **True**. My review has considerable momentum, solid support from leaders in the field of avian bioacoustics, and is nearly finished (awaiting data collected during 2015 spring/summer), but if some way is proposed to avoid a publication of my review, and these matters can be addressed in some satisfactory way without my public thrashing of the style of 'research' published by Jeff Podos, I'd be willing to consider any proposal from you.
5. I want to stop Podos from destroying any more graduate students. **Absolutely true**. I have studied the papers of only Goodwin and Moseley, and both are highly flawed, but excellently marketed. Science will be far better off without someone like Jeff training graduate students to work as he has.
6. I fret over abuse and waste of tax-payer money. **Not so much**. But I think that UMass would fret about this matter considerably, given that Podos has used over a million dollars of federal monies in these pseudoscientific endeavors.
7. This is a long-standing personal vendetta against Jeff Podos. **NONSENSE. FALSE**. I could send you my 2004 intra-departmental letter to Jeff in which I encourage him to do "science" rather than "marketing and advertising." There's nothing personal about that, but our friendly relationship stopped with that review, as he's never communicated with me since. ***This is about science. Period.*** It's about people like Jeff systematically and relentlessly undermining a field of endeavor that I cherish, i.e., learning what birds actually do. It is my opinion that we would know more about what birds actually do if Jeff Podos never published a 'scientific' paper. And, if this were really a personal vendetta against Jeff, I would have followed the demand of the UMass police (and presumably Podos) and told all 50 people with whom I was communicating that all of them were also liable

for criminal harassment charges if they attempted to communicate with Podos about his science; it was at that point that I told Officer Liptak of the UMass police that I would not comply with her demand, because following her orders would have made Podos appear as a complete fool to a large international audience.

A Solution, an Accounting

Here is what I wrote to Dean Goodwin on 17 June 2015. It may sound harsh, but I still believe now what I wrote then.

Each of us as scientists has our own standards by which we measure the ethical and scientific behavior of others. My accounting for Goodwin and Podos, and especially for Podos alone based on his other publications as well, would be swift and severe, as they undermine not only science as a way of knowing but also the public trust in scientists of all fields, from scientists who study birdsong to scientists who study climate change. In my accounting, I'd ask for the following:

1. A full retraction of Goodwin and Podos (2014, 2015) in *Biology Letters*.
2. The Association of Field Ornithologists retracts its best student paper award to Goodwin, for her oral presentation of Goodwin and Podos (2014) at their 2014 meetings in Rhode Island.
3. All papers published by Podos are now questionable, not only for their obvious flaws, but also for practices in data manipulation or selection and analysis that cannot be detected; until Podos himself convinces scientists that some of his papers qualify for the test of "utter honesty" and "scientific integrity" that Feynman advocates (see http://neurotheory.columbia.edu/~ken/cargo_cult.html), there would be a moratorium by all responsible scientists for accepting and citing these papers at face value.
4. The Animal Behavior Society, if it is a serious society that wishes to promote the scientific study of animal behavior, requests (or demands) that president-elect Jeff Podos resign that position.
5. The million or so dollars of tax-payer money that Podos has already spent on this "research" and graduate student training has done enough damage, and the Grants and Contracts Office at the University of Massachusetts, Amherst, should restrict all future grant applications from Podos until he has been rehabilitated as a scientist.
6. Graduate students in the Organismal and Evolutionary Biology program at the University of Massachusetts, and especially those under Podos' training, should use these documents . . . as a case study in how not to conduct oneself professionally. And no students would be allowed to train with Podos unless they are co-advised by another faculty member.

How to do science

In a wide-ranging critique of another scientist who claimed to have found a weakness in Podos' performance hypothesis, Zollinger, Podos et al. (2014; pdf attached) lecture that scientist on a number of issues:

- 1) faulty measurements and errors in methodology,
- 2) how data are interpreted,
- 3) validity of results,
- 4) experimental rigour,
- 5) alternative explanations and hypotheses for data,
- 6) the ability to reject hypotheses,
- 7) appropriate use of skepticism, and
- 8) problems in published papers that “undermine the validity of the results reported and the conclusions reached.
- 9) More generally, Podos and his coauthors fret that those who fail on the “basic principles” of science
- 10) will “have a profound adverse effect on the way the research field is viewed by the rest of the scientific community.”

That critique by itself is well-taken, and any scientist would agree with all of the generalities dictated there, but in the context of all that I have written here about the quality of Podos' own research, that critique is an extraordinary document . . . about which I need say no more.

Summary

As I wrote to Biology Letters on 23 October 2015:

My claims are about as serious as they come in science: Goodwin and Podos (2014) have fabricated a story by inventing (two) biological traits for their subjects that are well known not to exist. Then, also without telling readers, they discard data that don't tell the story, selectively reporting only a few statistically significant tests gleaned from all possible tests. Furthermore, they do the statistics wrong, both initially (2014) and repeatedly after their errors have been pointed out (2015), and then do their utmost to hide from public inquiry. The consequences for the scientific literature are the same as if the authors had fabricated data from the outset, i.e., a literature of mistruths.

And here are some unwelcomed supplementary facts, because I think they are not irrelevant. Podos trained with Steve Nowicki (now at Duke University), and the techniques used by Podos are also used by Nowicki (see first reviewed paper, by Podos, Peters, and Nowicki, in the

attached document **Podos and Performance Studies**). Nowicki was a postdoc in the same program as Marc Hauser, a former professor at Harvard University, who is now disgraced in academic exile for scientific misconduct (<http://www.thenation.com/article/disgrace-marc-hauser/>). The literature that Podos produces is as false, if not even more so, than that produced by Hauser.

This entire process has been no fun since last May, but I have been unable to sit idly by as a field of science that I cherish is so abused. Science is “self-correcting,” I’ve been told, and I am compelled to be part of the correction process. I know there are others who share my passion, and I am confident that, in the end, science will win. Science must win.

What next?

That is largely up to you, I understand, Dr. Malone. I look forward to hearing from you and settling these issues. And, as I have written numerous times before, anything I write may be shared directly with Jeff Podos (because of his legal threats, I cannot do that directly, or I would), but I would ask for the courtesy of a dialogue with Podos rather than a repeatedly one-way communication, with every response from Podos being kept secret.

Also, I can supply you with more documents, such as all of my emails with Biology Letters, with the Association of Field Ornithologists, with Deans Goodwin and McCarthy, the journal Animal Behavior—whatever you want. Ever since being threatened with criminal harassment, I have kept very thorough records of everything that has transpired.

Sincerely . . . Donald Kroodsma, emeritus, Biology Department, UMass Amherst
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List of attached documents:

1. VCRE--Scientific and ethical misconduct--Podos, Biology.docx (this letter)
2. No Teams of Rivals or Coalitions in Territorial Sparrows
3. Podos and Criminal Harassment
4. Zollinger, Podos et al. On doing science (2012)
5. Podos and Performance Studies
6. Honest Signaling and the Motor Constraints Hypothesis

Relevant references

Akçay, C., and M. D. Beecher. 2015. Team of rivals in chipping sparrows? A comment on Goodwin & Podos. *Biology Letters*. 11:20141043.

Feynman, R. P. 1985. *Surely You're Joking, Mr. Feynman!* W. W. Norton & Company, New York City.

Gitzen, R. A. 2007. The dangers of advocacy in science. *Science* 317:748-748.

Goodwin, S. E., and J. Podos. 2014. Team of rivals: alliance formation in territorial songbirds is predicted by vocal signal structure. *Biology Letters* 10:Article Number: 20131083.

Goodwin, S. E., and J. Podos. 2015. Reply to Akçay & Beecher: yes, team of rivals in chipping sparrows. *Biology Letters*. 11:20150319.

Simmons, J. P., L. D. Nelson, and U. Simonsohn. 2011. False-positive psychology: undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*. 22:1359-1366.

Zollinger, S. A., J. Podos, E. Nemeth, F. Goller, and H. Brumm. 2012. On the relationship between, and measurement of, amplitude and frequency in birdsong. *Animal Behaviour* 84:E1-E9.