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Bees Addicted To Neonics: A Failure Of Science Journalism

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Researchers don't always get it right. Scientists used to toiling in obscurity on arcane subjects can be lured into presenting hyperbolic conclusions from a media that demands sensational headlines, and confirmation bias remains a powerful psychological force within the scientific community.

So what does the media do when honest researchers realize their attention-getting findings were simply wrong?

If this case of "bee addiction" is any indicator, the answer is nothing.

Back in April, a provocative press release about a paper[1] by researchers at Newcastle University and Trinity College Dublin that suggested bees are 'hooked' on nectar containing pesticides, in the same way that a meth addict is hooked on stimulants.

They concluded that bees simply couldn't resist neonicotinoids, in the words of lead scientist, Geraldine Wright:

"We now have evidence that bees prefer to eat pesticide-contaminated food. Neonicotinoids target the same mechanisms in the bee brain that are affected by nicotine in the human brain. The fact that bees show a preference for food containing neonicotinoids is concerning asit suggests that like nicotine, neonicotinoids may act like a drug to make foods containing these substances more rewarding."

On a biological level, bees simply aren't equipped with the sensory mechanisms that would allow them to taste neonics. So they weren't attracted by its taste. The study hypothesized that the bees must have remembered to come back, irresistibly drawn not to the taste but to the nicotine high they received from it. As the BBC[2] put it, bees "get a buzz" from neonics.

CBS News called these findings "surprising."[3]The Washington Post[4] called the news "so much more chilling." Dave Goulson, a bee expert at Sussex University told The Guardian that, "At this point in time it is no longer credible to argue that agricultural use of neonicotinoids does not harm wild bees."[5]

Outright activist groups, of course, went wild with the usual calls for pesticide bans. A Sierra Club fundraising mailer says "You don't have to smoke cigarettes to die from nicotine poisoning."

Beyond Pesticides used the report to urge people to call the White House to demand a ban on neonics.[6] Predictably, Friends of the Earth,[7] Pesticide Action Network[8] and like groups celebrated the findings.

Despite all this coverage in top-tier media outlets, despite all the hype and blaring headlines, despite the loud calls of activists for "action" to save the bees based on the study's results, it turns out none of it was ever true.

No less an authority than Professor Wright, the lead author, conceded in a follow-up study[9]just a few months later that the claims that inspired all of the banner headlines were bogus.

Her team re-ran the tests and came to an entirely different conclusion. "Contrary to our predictions," she wrote, "we found that none of the solutions enhanced the rate of olfactory learning and some of them impaired it."

Now, if the researchers had stopped there and said “we jumped the gun” and ran to the media too quickly with their results, all would be well. Unfortunately,they came up with new hypothesis. Instead of turning bees into addicts, neonics now makes bees so stupid that they forget where the neonics are located. In other words, no matter what the bees do during a test—whether they remember or whether they forget—it’s being spun as proof positive that pesticides are bad. No matter what, neonics can’t win.

While it certainly takes courage to admit error, that’s a predetermined outcome—neonics are bad—and that has no place in science.

It says a lot about the current state of our media that the retraction of such a high-profile scientific claim never receives anywhere near the same coverage as the original outlandish assertion. Aside from small mentions in trade publications, there has been silence from the outlets that proclaimed pesticides were essentially crack for bees.

So thousands of people who heard the original headline probably still think bees are addicted to neonics, which is how confirmation bias plays right into the hands of activists with an agenda.

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[1] http://www.sciencedaily.com/releases/2015/04/150423234110.htm

[2] http://www.bbc.com/news/science-environment-32399907

[3] http://www.cbsnews.com/news/are-bees-getting-addicted-to-nicotine-in-pesticides/

[4] https://www.washingtonpost.com/news/speaking-of-science/wp/2015/04/22/new-studies-find-that-bees-actually-want-to-eat-the-pesticides-that-hurt-them/

[5] http://www.theguardian.com/environment/2015/apr/22/bees-may-become-addicted-to-nicotine-like-pesticides-study-finds

[6] http://action.beyondpesticides.org/o/7106/t/0/blastContent.jsp?email_blast_KEY=1329158

[7] http://www.foe.co.uk/blog/pesticide-lobbyists-spin-science-bees-pesticides

[8] http://www.panna.org/blog/newest-news-bee-harming-neonics

[9] http://www.nature.com/articles/srep15322