

Top 10 Articles of 2022: Opinionated Fetuses! Cheating Spouses! And Much More

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Do fetuses care about what their mothers eat? When do spouses cheat? Does the use of social media predict depression and anxiety? How can we understand and address older adults' loneliness? Some of the top articles published in the APS journals in 2022 explored these questions and much more.

In this conversation, Ludmila Nunes talks with Amy Drew, who heads up APS's journals team, for a countdown of the most impactful articles published in 2022.

[See a related article about the 2022 "top 10" list.](#)

Unedited transcript:

[00:00:13.010] – Ludmila Nunes

Does the use of social media predict depression or anxiety? Does test anxiety forecast exam performance? How can we understand and address older adults' loneliness? What is the relationship between playing a musical instrument and general cognitive ability? Some of the top articles published

in the APS journals in 2022 explored these questions and much more. This is under the cortex. I am Ludmila Nunes with the Association for Psychological Science to speak about the ten most impactful articles published in the journals of APS in 2022. I have with me Amy Drew, the director of publications at APS.

[00:00:57.350] – Amy Drew

Thanks for having me, Ludmila. It's great to be here.

[00:01:00.690] – Ludmila Nunes

Okay, so to start this year, 2023, we are going to be looking back at the top articles, the ones that were the most impactful during the year of 2022. And the way we selected these articles was based on Altmetric attention scores, which are awaited approximation of all the attention of research output gathers online, including mentions in social media as well as citations. So why don't you get us started with our number ten?

[00:01:36.110] – Amy Drew

Great, I'd be happy to. So coming in at number ten this year was does objectively measured social media or smartphone use predict depression, anxiety or social isolation among young adults? And this was published in Clinical Psychological Science. So this is an interesting study on a topic that feels like it's consistently in the news, particularly in relation to teenagers and young adults, and that's the relationship between social media or phone usage and psychological distress. So ultimately, they didn't really find that using technology more or less predicted meaningful changes in depression, anxiety and social isolation, or that fluctuating levels of psychological distress predicted phone usage. And this is true across pretty much all the subgroups they looked at. The discourse on this has really ratcheted up since the pandemic, of course, but it's been a connection that researchers have been trying to tease out for quite a while now. And the findings in this area so far have been really mixed. So despite the number of studies that have been done, we still don't have a great sense of whether or how these things relate to one another. So in this study, Craig Sewell and co authors looked at associations between three aspects of technology use, so the duration and frequency of smartphone use, and the duration of social media use specifically, and three aspects of psychological distress depression, anxiety, and social isolation.

[00:02:53.360] – Amy Drew

And they tried to overcome some of the methodological limitations of previous studies that have brought us to this kind of uncertain place. So one thing worth noting is that they use device log measures of digital technology use, like the screen time iPhone app, which aren't necessarily perfectly accurate, but are better indicators of technology behavior than self report, which for various reasons, doesn't tend to be the most accurate way of measuring when and how much someone is using their phone or social media. So the authors found that the perspective effects of social media and screen time on psychological distress were small and statistically non significant across both specifications and subgroups and vice versa. So the effects of depression, anxiety and social isolation on social media and phone use. So this is certainly an interesting contribution to this currently quite popular area of study.

[00:03:43.270] – Ludmila Nunes

And we've been seeing many studies on this topic and some of them find that using social media and using the phone a lot actually has negative repercussions in mental health. But others don't find it, which was the case in this article. And at number nine, Estranged and Unhappy examining the dynamics of personal and relationship wellbeing surrounding infidelity. So this was an article published in Psychological Science and what it basically tells us is that relationship functioning appears to start to decline before an infidelity episode happens. So Augusta Virova and colleagues analyzed data from German couples including about 1000 infidelity events and they found that a gradual decrease in relationship functioning and also in both partners well being usually preceded the infidelity. They also found that in most cases well being did not recover in the years following the infidelity. So what this is telling us is that there is already a problem with the relationship well being in both partners is already getting lower and the relationship functioning is decreasing before an infidelity event, not the other way around. It's not the infidelity that causes the relationship to become worse, it's just the relationship becoming worse seems to predict infidelity.

[00:05:17.670] – Ludmila Nunes

However, the exceptions to these were women who had been unfaithful and also individuals that already had a lower initial relationship commitment. These individuals could actually return to preinfidelity levels of well being and sometimes even exceeded it.

[00:05:37.150] – Amy Drew

And I guess it might be true what they say, which is people in happy committed relationships, don't you? That's what this research seems to be suggesting. All right, so our number eight article comes to us from Clinical Psychological Science, and it is called how to Change Negative Outcome Expectations in Psychotherapy. The Role of the Therapist's warmth and competence. So there are some people who come to therapeutic treatments with what is called negative outcome expectations meaning basically that they don't think that the psychological treatments are going to be helpful in solving their problems. They don't think the therapy will quote unquote work. And as we know from things like the placebo effect, one's belief in the effectiveness of a treatment can play a huge role in actual outcomes. So in order for therapeutic interventions to be effective, ideally practitioners must violate these negative expectations in order to supplant them with positive ones. Now, a lot of factors can play into outcome expectations but one is the interpersonal behavior of the therapist and specifically whether they are caring and engaged and if they seem like they know what they're talking about. So there have been reported links between warmth and competence and positive expectations.

[00:06:47.500] – Amy Drew

But these have mostly been in correlational studies. So these authors, Anne Seewald and Winfred Reef, wanted to establish a causal relationship. So what they did is they actually induced negative outcome expectations in their subjects, who were then exposed to videos that showed therapists in varying degrees of warmth and competence. So they basically wanted to see which combination of traits would lead to the most positive outcome expectations. And as they predicted, subjects who viewed a video of a warm and competent therapist had the most positive outcome expectations, and subjects who saw a therapist lacking in both of those qualities had the most negative outcome expectations. So this is pretty strong evidence to suggest a causal relationship that a therapist's warmth and competence can have

significant effects on a patient's outcome expectations. And the interpersonal behavior of a practitioner could play a role in affecting actual positive outcomes for their patients.

[00:07:42.310] – Ludmila Nunes

So it's not so much that the competence and warmth of a therapist makes them a better therapist, but can influence what the patient is expecting to get from the therapy and might actually influence the final outcome because of that.

[00:08:00.250] – Amy Drew

Right? Exactly. Yeah, it connects to how that person thinks what they're going to get out of therapy is going to be effective.

[00:08:07.730] – Ludmila Nunes

And at number seven, we have test anxiety does not predict exam performance when knowledge is controlled for strong evidence against the interference hypothesis of test anxiety. So this article was published in Psychological Science, and what it shows is that test anxious students do not appear to underperform in exams when the knowledge is controlled for, so they will still perform at the level of their knowledge, even if they are really anxious. So Thailbelt and colleagues analyzed data from medical students who used the digital learning platform to prepare for a high stakes final exam. And then they looked at the results of mock exams that were completed shortly before the final exam. And these results indicated that test anxiety did not affect students performance beyond their level of knowledge. However, the researchers also found that high trait test anxiety so students who are normally more anxious, not just in that given situation, these high trait test anxiety predicted smaller gains in knowledge over the exam preparation phase. So these findings suggest that test anxiety interventions should promote effective knowledge acquisition. So making sure that students are actually at the criterion level of knowledge rather than aiming to reduce test anxiety, because that does not seem to interfere to actual performance.

[00:09:48.310] – Ludmila Nunes

Except for those students who are always very anxious about the test. Those might learn less during the preparation for the exam, but they end up performing at the level of their knowledge.

[00:10:00.520] – Amy Drew

That's really interesting that it seems like test anxiety may actually exert a negative effect, but not necessarily during the test.

[00:10:08.080] – Ludmila Nunes

Yes, and I saw many people commenting on Twitter and other platforms about this article, and some people did not want to believe in it because it's very counterintuitive. We always think that students who are more anxious during the test will actually perform worse.

[00:10:25.110] – Amy Drew

Yes, that's definitely sort of how I've always thought of it. Okay, so the number Six article of 2022 was motivating personal growth by seeking discomfort. And this article comes to us from Psych Science. And this is one of those studies that I love that takes some sort of piece of wisdom that's just kind of floating out there in the ether and looks at it through an empirical lens. In this case, it's the idea that it's imperative to not avoid discomfort, which is kind of our natural instinct instead to embrace it. So this is something you hear a lot, especially in relation to personal growth everywhere from some Eastern philosophies to New Age self help books, to instagram hashtag, rise and grind culture. Move towards the discomfort, engage with the discomfort, whatever it is, to grow as a person. And usually when we're trying to maintain motivation, like, say, in trying to become a better person, we rely on positive feedback loops. It should feel good to grow. But often discomfort is an unavoidable part of the growth process. So these authors were asking, basically, is it possible to create a positive feedback loop by getting people to kind of reappraise their discomfort, to see it not as a negative, but actually as a sign of progress?

[00:11:35.410] – Amy Drew

And I feel like they picked the perfect arena for studying purposeful discomfort, which is improv comedy. And if you know anything about improv or have even just seen that one episode of The Office, you know, it could be an awkward affair, particularly in the hands of amateurs. So Caitlin Moley and Eilet Fishbach did a few experiments to kind of test out the effects of this embrace discomfort approach. And basically what they did was tell one group that their goal was to feel awkward and uncomfortable, specifically as this was a sign that the exercise was working or they were making progress. And the control group was given more kind of neutral goals, like developing a skill or simply completing the task. So improv students at Second City who were striving for awkwardness pulled more focus and took more comedic risks, and they also showed greater perceived achievement than the control group. So this group was more motivated and felt that they were progressing more. Just this idea of, gosh, I was so awkward in that exercise. So if discomfort is a sign of progress, I am crushing it, because that was really awkward. And the authors found similar results when they looked at other ways of embracing discomfort.

[00:12:41.630] – Amy Drew

So subjects read more articles on topics that can generally be considered unpleasant. So stories related to COVID-19, opinions from people with opposing political views, that kind of thing, when they were told their goal was to seek discomfort rather than simply seeking to learn. And people writing about emotional experiences felt that they had grown more and were more motivated to re engage in writing when their goal was to make themselves uncomfortable. So it seems that deliberately seeking discomfort as a personal growth life hack may actually be a viable way of motivating yourself to continue on a path of.

[00:13:14.770] – Ludmila Nunes

Self improvement, so pain can make you grow.

[00:13:19.710] – Amy Drew

Embrace discomfort. Brene Brown was right.

[00:13:23.470] – Ludmila Nunes

Okay, and at number five, this article might actually be telling us the opposite, but we need to take a short break.

[00:13:33.590] – Speaker 3

It's never been a more exciting time to join APS. APS membership gives you free access to a growing number of webinars and virtual events to help you advance your career, exclusive opportunities to contribute and share your science, reduced registration rates for two scientific conferences, and so much more. Ready to join a community dedicated to advancing scientific psychology? Visit member psychologicalscience.org to learn more.

[00:14:06.350] – Ludmila Nunes

Okay, and at number five critically ignoring as a core competence for digital Citizens this article published in Current Directions in Psychological Science. What it actually tells us is that sometimes we should embrace critical ignoring, choosing what to ignore and where to invest our limited attentional capacities to protect ourselves. And this can be particularly important online. Anastasia Casareva and colleagues suggest that digital information literacy must include competence in critical ignoring, and they propose three types of cognitive strategies to develop this type of literacy. One is self nudging, in which users ignore temptations by removing them from their digital environments. So instead of following people who they know will provide misinformation or will have triggering comments, they just remove those people from their environment. Another strategy is lateral reading, in which users vet information by leaving the source and verifying its credibility elsewhere online. So try to find out more about the sources of information and if they are reliable or not. And if they are not, then you should choose to ignore them. And the other strategy is to do not feed the trolls. Heuristic, which advises users to not reward malicious actors with attention. So if someone is being a troll and we can easily identify that, the best thing to do is to ignore them, not feed on the conversation, and not keep things going, because that can be harmful to our well being, that.

[00:15:58.150] – Amy Drew

Last one might be the toughest to resist being controlled. I will say that I have deployed at least one of these with my parents. I encourage them for every news story they see on Facebook to Google it and essentially confirm it via a separate source. So that has saved me a lot of panicked emails from them.

[00:16:17.600] – Ludmila Nunes

And I used to teach my students one of their first assignments was to verify if the source of a scientific story was reliable or not. So I've been trying to teach them to use this critical ignoring.

[00:16:34.750] – Amy Drew

Okay, so our next article relates to loneliness. It's called Understanding and Addressing Older Adults

Loneliness the Social Relationship Expectations Framework and this, unfortunately, is a topic that has become even more relevant in the past couple of years, since the pandemic began. And now the authors characterized loneliness as a perceived discrepancy between expected and actual social relationships. And I guess I hadn't really thought about it that way before. I hadn't really thought of what the definition of loneliness was. But it makes sense, right? So research shows that loneliness over the lifespan tends to follow a kind of u shape where it's highest in the teens and young adulthood and much later in life and then lowest in midlife. So it's obviously affecting a lot of older people. But the researchers wanted to know what the expectations of older adults are in terms of their social relationships. So what are they expecting that many of them are not getting? So the authors introduced the Social Relationship Expectations, or SRE, framework to specify the kinds of expectations that older adults have. So they theorized six aspects of these expectations, four of which they called universal, and two that are specific to this age group.

[00:17:42.120] – Amy Drew

So the universal ones that are relevant at any age are proximity or having social contacts available and accessible support, feeling cared for and able to rely on others intimacy. So feeling close and understood and listened to and fun, so sharing interests and having enjoyable experiences together. And then two aspects that are especially salient to older folks are generativity. So feeling like you're contributing meaningfully to relationships like volunteering or grandparenting, and respect. So feeling valued and actively included by everyone from close relatives to the larger community. So the authors hope that this SRE framework will inform our understanding of loneliness and suggest ways that might be addressed in older adults and specifically focusing on fulfilling those two age specific expectations. Generativity and respect could inform strategic interventions looking to reduce loneliness in older adults. So here's hoping for a less lonely old age for all of us.

[00:18:41.590] – Ludmila Nunes

Yes. So basically having a sense of community, but also that you are contributing to that community and you're being respected and valued.

[00:18:49.930] – Amy Drew

Yeah, I think the generativity one is interesting because I think particularly for older adults who maybe got a lot of that kind of from their work, derived that from their work and no longer having work. And you aren't necessarily sort of producing something the way you do through a job a lot of times, so finding it in other ways.

[00:19:06.770] – Ludmila Nunes

Totally. And this takes us to our number three article, which I believe it was in an episode with you, Amy. We talked about this one before. So it's an article in psych science. No evidence that siblings gender affects personality across nine countries. Do you remember this one?

[00:19:27.540] – Amy Drew

I do.

[00:19:29.430] – Ludmila Nunes

So basically the result is just that growing up with a sister rather than a brother does not seem to affect personality. Thomas Dudek and other colleagues did a comprehensive analysis of how siblings genders affect adult personalities and they use data of more than 85,000 people in twelve large representative surveys across nine countries, including the United States, United Kingdom, the Netherlands, Germany, Switzerland, Australia, Mexico, China and Indonesia. And they try to understand how personality traits of risk tolerance, trust, patience, locus of control, which means whether we explain our actions by something internal in our own motivations or if we tend to think that our actions are motivated externally. And also the big five traits which are openness, conscientiousness, extroversion, agreeableness, and neuroticism. So the researchers looked at these personality traits and chat if they varied depending on the gender of younger and older siblings, and what they found was that this did not matter. So it's a very dull result, but it's important to know these things because popular culture and popular knowledge sometimes assigns meaning to having grown up with a sister or a brother and how that can affect personality. So it does not seem to have any effect.

[00:21:13.420] – Ludmila Nunes

So this type of research is also really important when we get these null results.

[00:21:18.310] – Amy Drew

Yeah, and I think, as we talked about last time, we both know people who, you know, I'm this way because I grew up with an older brother or I had a younger sister, so that's why I'm this way. And it turns out that's probably not the case. All right, coming in at number two for the year is Experience of playing a musical instrument and Lifetime change in general cognitive ability. Evidence from the lothian. Birth cohort, 1936. So this is a Psych science article, and I actually sent it to my sister when it was published back in August. She's an elementary school music teacher, so I always like to share new studies about the positive effects of musical training with her. And as she certainly knows, and you might if you've ever picked up a clarinet or sat down at a piano, learning an instrument is a really cognitively complex task, and there have been studies showing a cognitive advantage of adults who play an instrument compared to adults who don't. Now, these authors, Judith Oakley, Katie Ovary and I, and Diary, were interested to know if the cognitive advantage conferred by learning to play an instrument is long lasting, sustained beyond the period of training.

[00:22:20.980] – Amy Drew

So does this advantage hold up over time? So they use data from the Lothian Birth Cohort 1936, which is a sample of individuals born in 1936 in Scotland who were tested for general cognitive ability at age eleven and then again at age 70, and they also provided information on their musical experience at age 82. So the authors were looking to see that people who had reported musical playing experience in their life show a bigger increase in general cognitive ability from childhood to age 70 than those who did not play an instrument. And they did find a positive association between experience of playing a musical instrument and lifetime change in general cognitive ability and the effect size was small but statistically significant, even after adjusting for potential confounds like sex, socioeconomic status, years of education, et cetera. So a causal relationship hasn't quite been established here, but this study does

indicate that playing a musical instrument is associated with a long term advantage in general cognitive ability. So a win for music educators everywhere.

[00:23:23.230] – Ludmila Nunes

Yes. So we are not saying, and the researchers in this article are not saying that go and learn to play a musical instrument because that will cause you to have a higher general cognitive ability. What they are saying is that the two things seem to be somewhat related. It's a small association, and we can't answer exactly why this association occurs. But probably there is some benefit in playing a musical instrument, not a direct cause. Yes.

[00:23:53.600] – Amy Drew

Doesn't seem like it could hurt.

[00:23:55.280] – Ludmila Nunes

Yes, exactly. And this takes us to our number one article of 2022. It's an article from Psychological Science, and the title is Flavor Sensing in Neutral and Emerging Discriminative Behaviors in the Human Fetus. I believe that most of our listeners have already heard about this article. So fetuses react with different facial expressions to different flavors of foods that their mothers are eating. So this is what this research showed, and not only showed that the fetuses can react with different facial expressions, but also that they already know what they like and don't like. Bezo Wusten and colleagues used 40 ultrasound scans at 32 and 36 weeks of gestation to examine the fetuses reactions after their mothers swallowed a vegetable capsule of either carrot or kale. And what they found was that when the fetuses were exposed to carrot flavor, they were more likely to show a laughter like face. But when they were exposed to the kale flavor, they were more likely to show a cry face. So the physicists did not like kale. They really liked carrots. And the researchers also found that these facial responses to flavors became more complex as the fetuses became older, matured.

[00:25:29.210] – Ludmila Nunes

So it's just a very interesting research, and it also came with photos, actual photos of the 4D ultrasound scans, and those were published everywhere. And I think that's what really drew people into this research, too.

[00:25:44.670] – Amy Drew

Yeah, I think this is a really cool study, but I gather, man, I'm a little freaked out by those advanced me too imaging. I guess I'm just an old folkie. These ones are, but I think people find them cute. Yes. I mean, you really do. You know, it's kind of like, what does a fetus look like smiling and crying, but you really do. You can really see the features in those images. It's pretty wild.

[00:26:10.470] – Ludmila Nunes

Okay, and this was our top ten of 2022. Thank you so much for joining me, Amy.

[00:26:17.440] – Amy Drew

Thank you for having me. It was really fun to look back at the year with you.

[00:26:21.020] – Ludmila Nunes

This is Under the Cortex. And I am Ludmila Nunes. Thank you for listening.

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