What gives away a deceitful 911 caller who might have committed a crime? From a cross-cultural spin on the classic “marshmallow experiment” to deceitful 911 homicide calls to what true smiles do, new research in APS journals explores a broad range of topics, including visual memory and success. In this episode of Under the Cortex, APS’s Ludmila Nunes and Andy DeSoto—both of whom are psychological scientists themselves—discuss five of our most interesting new research papers.

APS members get advance notice of all new research through our This Week in Psychological Science newsletter and may access the complete archive of APS journal articles. Learn more at psychologicalscience.org.

Unedited Transcript:

Ludmila Nunes (00:13)

So much research is published every week in top scientific journals, but it’s hard to keep up with all of it. In this episode of under the Cortex, we will round up some of the most recent research published in
the journals of the Association for Psychological Science and present it to you. This is Ludmila Nunes, and you are listening to Under the Cortex, an Association for Psychological Science podcast. Hi Andy, thanks for joining me today.

**Andy DeSoto (00:44)**

Hi Ludmila, it’s great to be here. Thanks for having me.

**Ludmila Nunes (00:47)**

Before we start today, I think it’s great we have a quick introduction. I am Ludmila Nunes, the science advisor here at APS. And joining me today is Dr Andy DeSoto, the director of government relations at APS. Andy, would you like to explain what you do?

**Andy DeSoto (01:06)**

Sure, absolutely. So I’m a cognitive psychologist by training, Ludmila, as you know. But I head up APS government relations work and I like to describe that as really having three main parts. The first is that we advocate on behalf of the behavioral and social sciences research and training to US. Congress and federal agencies and internationally where we’re able to do that. The second thing that we do is we keep our members and other folks up to date on developments of interest in the funding and policy landscape. So if you visit www.psychologicalscience.org policy, you can see a lot of the work that we do on that front, which involves helping organize and host webinars focused on funding opportunities and the like, policymakers and other presentations and write ups that might be of interest. And the last thing, and this is something that’s increasingly important to APS and to our members, is that we advocate for the increased involvement of psychological science and behavioral and social science broadly in public policy making. As you know so well, there’s so much that our science is able to contribute to so many ongoing challenges and the like that face us, and our science is not always represented where it ought to be.

**Andy DeSoto (02:24)**

So we do what we can to make sure that all audiences are aware of the contributions of our field very broadly and that it’s leveraged where it’s able to be. So some of this, I think, will come up during our conversation today. But for sure, if any interested listeners want to know a little bit more about APS’s government relations program, please do feel free to reach out to me directly or visit the website that I mentioned earlier.

**Ludmila Nunes (02:47)**

Yeah, that’s all great. I know a lot about the great work you’ve been doing and it’s really important that we talk about this research and we also show how it can be applied to improve people’s lives overall.

**Andy DeSoto (03:02)**

Absolutely right.
So let’s dive in in our little selection for this week.

Sure. And thank you for identifying some of these papers that you’ve been excited about, Ludmila, that have come out recently. The first one that I want to share with our listeners is a paper titled Culture crossing: the power of habit in delaying gratification. The lead author on the paper is Kaichi Yanaoka and one of APS’s members, Satoro Saito is also a coauthor on this publication that comes from our flagship journal, Psychological Science. And our listeners may be interested to know that this particular paper was pre registered and that the authors of the paper made their prediction about how the paper was going to turn out before they embarked on data collection and analysis. This is a really interesting paper because it takes a crosscultural approach to a very important topic in psychology, psychological science, which is the delay of gratification. I think many listeners, whether you come from a background in psychological science or not, will be familiar with the marshmallow task, the marshmallow experiment, which assesses a young child’s ability to choose to wait for a little while to be able to benefit from, in this case, two marshmallows, a second marshmallow, second task, or whether the impulse is to eat that marshmallow immediately.

And there’s been a lot of really interesting research since those landmark experiments that have explored how whether individuals have that impulse control and are able to wait in exchange for an additional marshmallow or gobbled it right up immediately, and how that can correlate with all sorts of later life outcomes. But the reason this paper is so interesting is it examines that delay of gratification, the ability to wait for, in this case, the food or the marshmallow in both United States children and children who are in Japan, and also looks at a similar result for not in this case, holding off eating, but also holding off or delaying gratification to wait for opening a gift. So in this experiment, they examined whether American and Japanese youth would be able to delay the gratification for both eating that marshmallow, eating the food, and opening the gift. And really interesting to compare those two findings. And what was really interesting about this paper is that the office found that in the United States, the children were able to delay their impulse control and delay the gratification longer for gifts than for food. But it was the opposite in Japan, where waiting to eat was more common in Japan than the United States.

So, again, really interesting paper. And that it took this experimental methodology that’s been an important backbone of a lot of psychological science studies in the past, and added this really interesting cross cultural component and examined the ability to delay gratification for opening gifts in particular. Cool paper.

It’s a really cool paper. And I wonder if in the future people will actually repeat this study and try to see
the implications for the success in later life that is usually associated with the ability to delay gratification if it’s also going to depend on the culture.

**Andy DeSoto (06:18)**

Yeah, one of the reasons it’s such a funny study is because we’re also familiar with this experience, to the experience of sitting down at the table and maybe your restaurant entrees are delivered, but one person at your table is not. And how long do you wait? And what are the social norms in the etiquette involved? And same thing gathering around Christmas tree or another holiday to celebrate a holiday and when is it safe and acceptable to begin opening gifts? And it really is different across cultures. And I think that the findings that have been described in this study really cement that.

**Ludmila Nunes (06:52)**

Yeah, and it’s funny because in Europe I feel that we actually wait more. So I’m European. If our listeners didn’t know yet. And we tend to wait more for food than for opening gifts. So I wonder if we would be more similar to Japanese children than to the American children.

**Andy DeSoto (07:09)**

Good idea for a follow up study. Absolutely.

**Ludmila Nunes (07:12)**

Yeah. I’m giving ideas here. So another interesting one, completely different was this article that was also published in Psychological Science and also preregistered. So our authors are following good open science practices. So this article called Deception cues during high risk situations: 911 homicide calls was authored by Patrick Markey and a team of researchers. And what the researchers did here was examining whether certain cues could indicate that 911 callers were actually not innocent, meaning they could be involved in the homicide they were reporting. So they asked judges to rate the cues displayed by a sample of 911 homicide callers. And they found that deceptive colors tended to display overtly emotional cues. So they acted more moody, more nervous. They also acted more overwhelmed, and they tended to tell unclear narratives. All of these by comparison with nondeceptive colors. Of course, the authors also indicate that this pattern of deceptive cues could be used to help establish guilt or innocence of the color in different samples of 911 callers. So these results indicate that maybe law enforcement officers and others could use this pattern of cues identified here and displayed during emergency calls to identify whether the call is deceptive or not.

**Ludmila Nunes (08:59)**

And this could potentially be used also to help identifying people and areas of interest in a homicide. I see some potential for policy here. What do you think, Andy?

**Andy DeSoto (09:12)**

Yeah, I think so. I think the value of a really interesting and compelling initial study like this really does
have potential implications. One of the things that I always look to, especially for articles that are published in Psychological Science and literally, you know, this is that many of our articles may be, correct me if I’m wrong, maybe it’s all of the articles published in Psychological Science come with a statement of relevance.

**Ludmila Nunes (09:34)**

Yes, all of them do.

**Andy DeSoto (09:35)**

Thank you. And I really recommend for folks who are interested in learning about an author’s vision for how this work might be publicly relevant or relevant to a larger community, do go straight to that statement of relevance. It’s published on the Psychological Science articles because it does give that example. I think this article in particular is a really great example of the value and importance of psychological science because understanding and identifying deception is such an important topic and important for so many reasons. 911 is just one example, but a lot of people may have lay theories and beliefs about how deception is identified. And it’s the reason that we need these studies is because some of those preexisting beliefs we have about how we identify deception may be true or they may be false. And we really need the scientific research to identify. So the evidence that this paper presents that there are some ways that deception can be identified over a 911 call is really critical. Back to the potential policy making context in our work. We don’t work too closely with police departments or the like may be receiving these calls, but I think increasingly across the United States, and I think in other countries too, there’s increasing appetite for applying some of these insights from psychological science into decision making.

**Andy DeSoto (11:01)**

And I think many potential audiences who do have to make these split second decisions about do I trust this person? Do I not trust? Is this somebody telling the truth? Is this like the paper suggests, maybe even the perpetrator of a crime? Is it someone who is just trying to prank or cause trouble? Anything that can help these departments make these really important split second decisions is really important and interesting.

**Ludmila Nunes (11:25)**

Yeah, as you said, there is an appetite for this information. It’s just probably difficult for these departments to also find it and that’s part of what we try to do. Did you select more, something else for this week? Something lighter maybe?

**Andy DeSoto (11:41)**

Yeah, I know something that’ll make us all maybe smile and grin. A pun that’s around the corner. We the true smile with the true smile. This paper is titled More what Duchenne smiles do, less what they express. And the paper is authored by Eva Krumhuber and Fellow of APS Arvid Kappas and published in Perspectives in Psychological Science. And I bet just about every listener of this podcast will have
read something about this phenomenon of Duchenne smiles, which are these smiles that involve the mouth and eyes and understood the signal sort of true enjoyment or appreciation. And if you, like me, had the prior understanding that these smiles, these smiles, are how you can actually tell whether somebody is actually happy or just faking it, this paper really sets those beliefs in doubt. The authors look into and examine all the literature that has been cited on these two since miles. And I’ll just quote something that you shared previously, Ludmila, that these findings are inconclusive, they’re irrelevant, they’re incomplete. And on top of it, they show that individuals are actually able to manufacture Duchenne smiles even when they don’t feel positive things. And thinking about it now this paper does relate a little bit to the one that we were just talking about.

Andy DeSoto (13:07)

And that something that I think the scientific community believed was very often associated with positive emotion. It sets that in doubt a little bit. And I think the work by Krumhuber and Kappas here that in this paper say, well, maybe we scientists have a lot more to know about this particular phenomenon and what it means. So the previous paper we described said, well, here are some things that we know are associated with a particular outcome. And then this particular paper says, well, some things that we thought were may not be the case. What do you think?

Ludmila Nunes (13:42)

Yes, that’s true. I agree with that. But an interesting approach that the authors also took in the paper was making us think that maybe these true smiles or maybe they’re not that truthful, but they still might have an important function because not of what they show, but of what they cause. Because when we see someone portraying this true smile, we might actually feel better about that person. We might form a more positive impression and we might be more willing to help that person, for example. Hence the title, it’s more about what they can do than what they are actually expressing. So it’s also a cool approach, I think.

Andy DeSoto (14:27)

I agree. It’s a neat paper and something to smile about. I’m sure the author who writes this paper, they probably roll their eyes a lot at all the jokes people make, but very cool paper. Maybe I’ll move on to another one.

Ludmila Nunes (14:39)

Yes, please.

Andy DeSoto (14:40)

The title of this paper, again published in Perspectives on Psychological Science is titled Wrecked by success? Not to worry. And the lead author is Harrison Kell and features work from APS Fellows, David Lubinsky and Camilla Benbow. I was not familiar with this hypothesis, wrecked by success hypothesis, until I learn more about this paper. Apparently it was initially formalized by Freud and it suggests that when you’re really successful in your occupation, it has significant negative impact on psychological
interpersonal physical wellbeing. But it examines this phenomenon by comparing participants with exceptionally successful careers. The authors didn’t include me in the data collection. I hate to say, but they explain.

Ludmila Nunes (15:34)

Well, your life is still good.

Andy DeSoto (15:38)

Exactly. That’s right. People who are really successful, they compare to people who are not as successful, maybe are more average or more typical. And they compare these two groups on a variety of different factors psychological wellbeing, how they evaluate themselves, whether they’ve had medical issues, challenges, or particularly positive family relationships. And you know what they find at the end of the day, these people who are remarkably successful and these people who have more of an average level of success, they’re about the same on many of these factors. So as the title suggests, if you’re particularly successful, it’s unlikely that you’re going to be wrecked by it, at least for the analysis. These individuals have conducted. So I can breathe a sigh of relief.

Ludmila Nunes (16:27)

True. And also people who are not that successful by any standards, by these career standards or the way they feel socially, they also can sigh in relief because they’re also not feeling worse than the people who are more successful.

Andy DeSoto (16:46)

Oh, that’s a good, very good point. Yes, absolutely right.

Ludmila Nunes (16:50)

Okay. And I think I’m going to end our research roundup with an article published in Psychological Science authored by APS fellow Klaus Oberauer. And the title of this one is Little support for discrete item limits in visual working memory. So I’m going to be talking a little bit about more basic science that we might not see immediate applications in our daily lives. But it’s really important that this science is being conducted because this is what allows us to reframe theories and abandon some theories and create new ones. So this one is particularly interesting. It’s about visual working memory. So the visual content that we can hold in our memory and use it very rapidly, so things that we might not need to keep for a long term recall, we might not need to remember these things in one or two days, but we need to remember them almost immediately after we saw them. So in this article, what Ober did was replicating some experiments that had examined how many items people could recall immediately in this type of immediate memory. So what Ober did in this article was redoing some previous experiments that had indicated that likely people would have a discrete number of slots in their visual working memory and then they would be able to hold one object in each slot and then recall those objects.

Ludmila Nunes (18:40)
So Oberauer here found support for an alternative theory that would say that instead of that, what people have is variable degrees of strength and precision to which they encode and they keep those features in their visual working memory. So how did he study this? So he showed participants colored squares and then asked them to immediately remember the color of the squares. And these were presented in sequence and then participants could remember in the sequence they preferred. Previous studies had indicated that participants were able to recall up to six of these colors, but then they would just start guessing and they also show the preference for reporting first the ones that they were more certain about. But this is not what Aubrey found. What he found was that people didn’t exactly guess the colors. They were pretty sure about what they are producing or they were not. And also where some people guess had a preference for guessing, others didn’t. And the heterogeneity of these results support the hypothesis that rather than visual working memory having these discrete limits so these slots, some individuals might decide to guess on the hard trials whereas others might not.

**Ludmila Nunes (20:12)**

And also they did guess only when they had weak information in memory, but not consistently others would just not guess. So this is an interesting one. It’s interesting because it presents contradictory findings to a different study and also shows that the theory, the idea that we have these fixed slots in our working memory and it has a limited number might not be true. It will probably depend on the individual, it will depend on the context and probably on the task. Like if there is a cost to guess or not, this could probably change these trends.

**Andy DeSoto (20:53)**

It’s a neat study, Ludmila. One of the takeaways for me is just how amazing and dynamic our brains, sensory and cognitive systems are to be able to respond to this complicated information, to respond to the demands of the task and individual differences in memory or the strength of what was encoded and to be able to respond accurately. It’s a sophisticated study that really shows how amazing these perceptual processes are. So thank you for summarizing that. I think every time I hear about these really interesting visual experiments, almost like a little game of Simon remembering things that have been displayed, I just am impressed by everything that our brains do without even thinking about it. So thanks for capturing that.

**Ludmila Nunes (21:37)**

Yeah, I thought this one was really interesting and also the procedure itself. As you said, it’s almost these games, but then it ends up being so hard to explain because everything is so controlled and we need to study these things very precisely. So I think we are done for this week. It was great chatting with you about the most recent research we published and I hope to talk to you soon.

**Andy DeSoto (22:02)**

Absolutely. Thanks for letting me join and have a chance to chat with you and looking forward to being on to discuss more in the future.

*Feedback on this article? Email apsobserver@psychologicalscience.org or login to comment.*