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Psychological Underpinnings of Monosodium Glutamate (MSG) Avoidance: Why is MSG Shunned When Experts Say it's Safe?

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Behavioral science researchers explored the psychological reasons for why people choose to avoid MSG despite the scientific evidence showing it is safe and that there are benefits to using the ingredient. This is a summary of the research and what was uncovered.

Introduction

Human judgments are typically made quickly, yet our intuitions often feel very strong. We do not generally feel an urge to self-reflect on these intuitions, so we are often wrong without knowing it. Generally, we are more certain in our beliefs than we should be. Psychologists call this tendency "overconfidence."[1]

Emotional reactions are also typically made quickly and so they often contribute to our early intuitions. Our reliance on emotions in decision making is called the Affect Heuristic[2] and it can lead us to judge things that feel dangerous and unknown as riskier than things that feel safe and familiar. In fact, we are especially likely to rely on the Affect Heuristic when making decisions if our level of knowledge is low.[3]

Monosodium glutamate (MSG) is a food additive that is unnecessarily avoided by millions of people. We sought to investigate whether overconfidence and Affect Heuristic might be implicated in this avoidance, and we found evidence that they are. Our survey of hundreds of people indicates that not only do those who avoid MSG show a lack of knowledge around the ingredient they adamantly avoid, but also that their avoidance is grounded more in emotion than in fact.

What We Did

We surveyed 800 U.S. adults (ages 24-39 and 56-74) about MSG knowledge and attitudes. We sought to compare the knowledge and attitudes of MSG avoiders vs. MSG acceptors, and of millennial vs. baby boomer adults as attitudes toward MSG may differ by generation. The initial wave of anti-MSG sentiment got public attention in the 1960s and 1970s, when baby boomers were young adults. We wondered whether such sentiment would be as strong among a new generation of young adults who may have had less exposure to anti-MSG messaging.

What We Found

MSG Avoidance is Associated with a Lack of Knowledge

People were asked 10 multiple-choice questions about MSG and then asked how they thought they performed on the questions. We found that those who performed the worst on the questions had a higher level of overconfidence in their knowledge than those who performed the best. Researchers call this common pattern the Dunning-Kruger Effect,[4] named after the two psychologists who identified it.

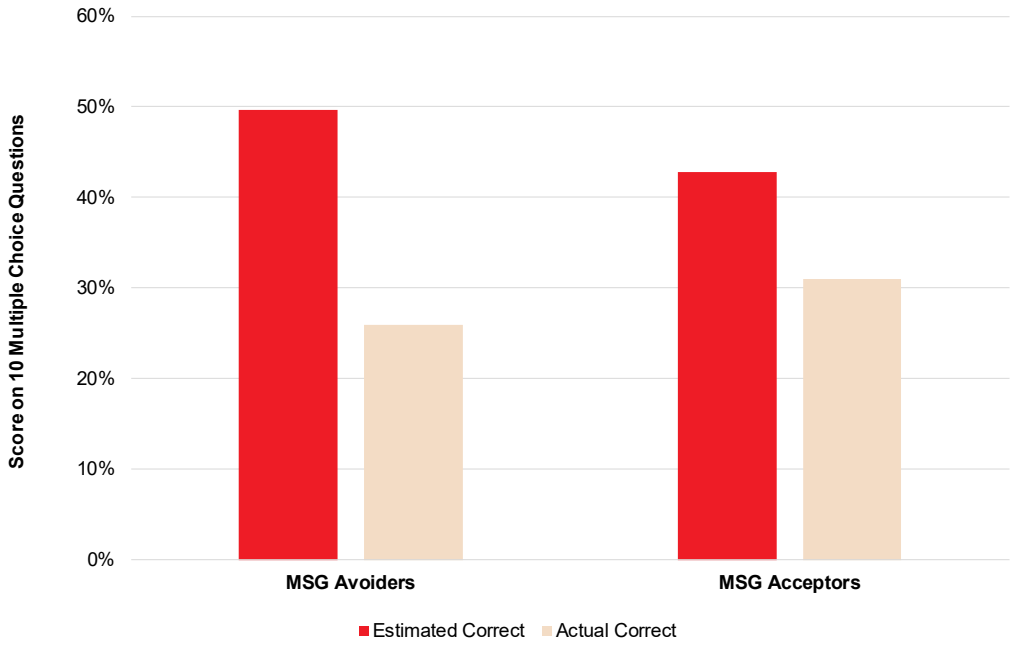
In addition, those who said they avoid MSG were more overconfident than those who said they do not avoid MSG (see Figure 1). MSG avoiders believed they scored 24% better than they actually did while MSG acceptors had more realistic assessments of their knowledge level, only thinking they scored 12% better than they actually did.

Why this level of overconfidence among MSG avoiders? It could be due to incorrect categorization.

People make inferences about products based on how they categorize them, and our research shows that MSG is often miscategorized as both an allergen and as a toxin – two categories associated with negative outcomes. In reality, MSG is neither an allergen nor a toxin.

When asked if MSG is like an allergen, 68% of MSG avoiders indicated some level of agreement. At the same time, when asked if MSG is like a toxin, 62% of MSG avoiders indicated some level of agreement. This is of course correlation. Further research should investigate whether miscategorization of MSG leads to false impressions of the ingredient, or vice versa.

Figure 1.
Levels of Actual MSG Knowledge and Perceived MSG Knowledge



MSG Avoidance is Rooted in Emotion Rather Than Explicit Fact

When asked about how they'd feel if they accidentally ate MSG, those who avoid MSG indicated that they would have strong emotional reactions. Ninety percent of MSG avoiders said they would be angry if they consumed MSG unexpectedly and 93% said they would be disgusted if they consumed the ingredient unexpectedly.

This level of emotional reaction is akin to the emotional reactions of those who avoid genetically modified organisms. Ninety-four percent of GMO avoiders said that they would be angry if they consumed GMOs unexpectedly and 94% also said they would be disgusted if they consumed them unexpectedly. This finding is noteworthy as other researchers[2] have identified strong emotionally-based moral opposition toward GMOs.

To explore the lack of fact-based MSG avoidance, we asked people why they first started avoiding MSG and if they could remember their first negative experience with the ingredient. Forty-three percent of MSG avoiders said they began their avoidance after reading online that MSG should be avoided. In addition, 11% of MSG avoiders could not remember a specific instance when they had a negative experience with MSG. When asked follow-up questions, many who did claim to remember a specific experience could not provide details of the experience. Paired with our emotion findings, these results suggest that MSG avoidance is substantially based on the Affect Heuristic rather than explicit fact or personal experience.

Conclusion

If MSG avoidance was based on MSG knowledge, we would expect avoiders to know more about MSG, and be more aware of what they don't know.

However, we find the opposite. MSG avoiders not only know less about MSG, but more importantly, they are more unaware of their own ignorance compared to MSG acceptors. While it is common to see some level of overconfidence in most people, the heightened overconfidence of MSG avoiders coupled with their emotional response to the ingredient seems to suggest a mostly nonfact-based opposition.

This coupling can make MSG acceptance challenging. MSG avoiders' ignorance about MSG facts cannot be addressed by simply showing them the science because they may be too emotionally invested in their opposition. We found that when presented with a number of scientific facts that directly contradict their beliefs about MSG and its negative effects, MSG avoiders' perceptions of MSG didn't improve and in some cases, became even less favorable toward MSG.

Since scientific messaging does not seem to resonate with MSG avoiders, re-introducing them to MSG may be more effective in changing their perceptions.

> *Only 18% of MSG avoiders said that they started to avoid MSG because of a negative reaction that they personally experienced. So, what if they tried the product again?*

Perhaps if they try the product a few times and don't experience negative symptoms, they may be convinced that MSG is fine for them to eat. Culinary leaders can encourage this kind of trial (and many do).

Interestingly, millennials and baby boomers showed similar levels of anti-MSG sentiments. This is somewhat surprising since anti-MSG misinformation may have been more prevalent in the 60s and 70s. Millennials' reservations about MSG may be reflective of more general reservations that this generation seems to have about food. We found that millennials were more concerned about GMOs, gluten, and animal products than baby boomers.

In order for perceptions of MSG to shift, emotional and factual appeals must be made together. Approaching individuals with rational *and* emotional appeals will most effectively encourage them to reconsider what they truly know about MSG.

Key Takeaways

- People are generally overconfident in their level of MSG knowledge, but those who avoid MSG are considerably more overconfident.
- MSG avoidance is often based on Affect Heuristic rather than explicit fact.
  - MSG avoiders react to MSG with a similar level of anger and disgust that GMO opponents have toward GMOs.
  - Many MSG avoiders started avoiding MSG because of what they read online rather than their own personal experience.
  - MSG avoiders have a hard time recalling specific occasions of negative experiences with MSG.
- To shift perceptions of MSG, health professionals and communicators need to do more than simply inform MSG avoiders of the ingredient's safety. Emotional appeals should be made in addition to encouraging people to reevaluate how much they truly know about MSG. People should also be encouraged to trial the seasoning.

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References

1. Moore, D. A. (2020). Perfectly Confident: How to Calibrate Your Decisions. HarperCollins Publishers.
2. Scott, S. E, Inbar, Y., & Rozin, P. (2016). Evidence for Absolute Moral Opposition to Genetically Modified Food in the United States. Perspectives on Psychological Science, 11(3), 315-324.
3. Gazach, Y. (2000). Judging risk and return of financial assets. Organizational Behavior and Human Decision Processes, 83, 353-370.
4. Dunning, D. (2011). The Dunning-Kruger effect: On being ignorant of one's own ignorance. Advances in Experimental Social Psychology, 44, 247–296. San Diego, CA: Elsevier.